



Central Coast Water Security Plan

CONSULTATION REPORT

Central Coast Council

August 2021

1 Executive summary

This report provides an overview of the engagement activities undertaken for the Central Coast Water Security Plan (CCWSP) which was carried by Central Coast Council from December 2020 to April 2021.

This report documents the methods and approach of the engagement, provides an analysis of what we heard, and a response to community and stakeholder feedback during this phase.

What we did

A representative sample of the Central Coast community was taken on a journey to learn about their water values and educate them on the different water supply and demand options being considered. Five portfolios – or groups of options – were presented to the community and we set out to learn what a representative sample of the Coast community's preferences were.

Three phases of community consultation consisting of deliberative forums and in-depth phone interviews were conducted in December 2020, and February and April 2021. As these forums and in-depth phone interviews were of a representative sample of the Central Coast's demographic, the data we received from these was used to inform the development of the CCWSP.

During the second and third phases of community consultation, we also ran two online opt-in surveys from 8 February to 21 March 2021, and from 19 April to 2 May 2021. However, these surveys were available to anyone to fill in, so the data we received from these surveys was not representative of the Central Coast. As such, these surveys were used to build awareness within the community and identify areas where future engagement and education would be of most value. This dataset will not directly inform the development and selection of the preferred portfolio within the CCWSP.

What we heard

1.1.1.1 Deliberative forum and phone interviews – round 1

Central Coast residents appeared to have a positive attitude toward water usage, trying to use as little water as possible and acknowledging that their attitudes to water usage have changed as a result of the recent drought, water restrictions and bushfires.

There are many water values that emerged that Council needs to be cognisant of when planning water for the future, such as reliability, affordability and environmental impact, and the ranking of importance of the various values or considerations will occur in the next round of engagement forums and in-depth interviews.

Water restrictions were seen as important and an accepted component of any future drought management plan, and the majority of the restrictions and regulations explored in the engagement are accepted by participants, with strong support for some restrictions being in place at all times, for example, no outdoor watering between 10am-4pm.

1.1.1.2 Deliberative forum and phone interviews – round 2

There appeared to be agreement amongst participants that the water values generated in the first round of engagement are appropriate for Council to use as a decision-making framework when considering which water supply and demand options to invest in the future – in particular long-term reliability, environmental impact and cost to operate are felt to be very important in the decision-making process.

Both water conservation and recycled water for non-drinking emerged as (equally) the most preferred water supply options amongst residents and small-medium enterprises (SME). Water conservation practices were regarded as essential all of the time by many and most agreed that it should be considered as a component of any portfolio of water supply and demand options in the future. Similarly, recycled water for non-drinking, despite some minor concerns about potential cross contamination, was thought to be an efficient use of wastewater and was considered sensible not to use drinking water for gardens and parks.

There was also strong support for Council to continue to share water with Hunter Water customers and make greater use of the existing infrastructure and pipeline.

Stormwater harvesting was also a relatively popular option and included the use of rainwater tanks for personal use in the home and garden. There was strong support for Council subsidising the cost of a rainwater tank, particularly if residents could pay \$1,000 or less.

There was some uncertainty around the use of purified recycled water for drinking, although many were quite accepting of the idea – recognising that it is being used in places around the world and also showing trust in the strict Australian water guidelines.

Desalination was an option known to be reliable and was seen to make sense, however there were concerns over the cost to build and operate, the impact on the environment of the brine water, and the energy required to operate the plant. Offset programs were felt to assist in some respect but they do not solve concerns relating to the brine issue.

Building of new dams was generally felt to be contentious, however raising the walls of the current dams was met with greater community acceptance. While dams are felt to have low ongoing cost and were seen to be relatively reliable sources of water there were still many who had concerns about their impact on the environment and more specifically on river systems.

1.1.1.3 Water options opt-in survey

Ten supply and demand water options were presented to participants. The top three most supported options were:

1. stormwater harvesting – 90% support
2. recycled water (non-drinking) – 76% support

3. water sharing – 75% support

1.1.1.4 Deliberative forum and phone interviews – round 3

There was widespread support for Council adopting a portfolio approach in planning water for the future in the Central Coast region. The idea of having several options rather than placing all our 'eggs in one basket' was felt to reduce risk, reduce the cost and seen to be common sense.

It must be noted that this third phase of engagement was the first time that participants had seen any estimates of cost to build and cost to operate, and clearly revealing this appeared to have had an impact on attitudes and level of support for some of the water options. In particular, support for the rainwater tank scheme appeared to have declined somewhat in this phase due to the relatively high cost for Council.

Support appeared to be greatest for Portfolio 2, which included water conservation, recycled water for non-drinking, EFS/PRW and involved the building of a larger desalination plant (30 megalitres per day (ML/day)).

Elements in this portfolio such as recycled water and EFS/PRW are particularly appealing and the strong reliability of this option, even during periods of drought, and relatively lower cost to build and operate contributed to its appeal.

Desalination plants continue to be source of contention and debate amongst the community and while some remain sceptical about them, many participants in this engagement program appeared to have become more accepting of them (compared to when the engagement process began). There appeared to have been a gradual recognition throughout the engagement process that desalination is probably a necessary component of any future water management plan due to the negatives associated with other options, the amount of water a desalination plant can produce and the fact it is not reliant on rainfall. It was also acknowledged that when the Coast next experiences a severe and prolonged drought, desalination would be required as part of the drought response plan, even if other investments were made as part of the long-term supply plan.

From this engagement it was also clear that if Council decides to build a desalination plant it should build one that has a larger capacity (30ML/day), rather than the smaller option, to take into consideration the changing climate and population growth and show that it is planning for the longer term.

Similarly, in planning for severe droughts, while the proposed level of service scenarios were viewed as not ideal, there was greater acceptance of Scenario 1 (which was based on an average residential usage of 125 megalitres per person per day) and involves the building and operating a larger 30 ML/day desalination plant, as opposed to Scenario 2 (100 megalitres per person per day) based on a 20 ML/day desalination plant.

1.1.1.5 Water portfolios opt-in survey

Five water portfolios (or groups of options) were presented to participants. The portfolios ranked from most supported to least supported were:

1. Portfolio 3 (61%)
2. Portfolio 4 (56%)
3. Portfolio 1 (42%)
4. Portfolio 2 (40%)
5. Portfolio 5 (33%)

Note: the percentage above is those who selected “totally support” and “support”.

It's important to note that while we do our best to develop projects to meet the needs and requests of the community and stakeholders, technical constraints, costs, and the overarching project objectives must also be considered to deliver a project that is safe, functional and best balances the competing needs of all those affected including the environment.

Our response

Throughout the consultation period, we heard a range of concerns, suggestions and questions – from the financial, environmental and social impacts of our water options, through to alternative ways to source water.

We were able to respond to any feedback we received in the deliberative forums and the in-depth phone interviews at that time. However, we also received a range of feedback from our two opt-in online surveys.

We have used this report as a way to respond to the feedback received from the online surveys. Due to the large volume and variety of content contained within this community feedback, not every issue or theme has been included to and responded to in this report, however all feedback has been read and will be considered by the project team.

A full breakdown of our response can be viewed in **Section 5 – Council’s response**.

Next steps

All the feedback we received from this consultation, as well as other ongoing investigations, modelling and analysis, will be used to inform the development of the draft Central Coast Water Security Plan.

The draft plan will be placed on exhibition in late 2021 where the community will be able to again have their say.

We will inform the community of the finalised plans in the coming months.

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2 Introduction

2.1 The Central Coast Water Security Plan

It is important that we continue to plan for the Central Coast's future water needs.

As the Central Coast grows, so does the demand for water. However, our current infrastructure can only supply us with a limited amount of water, so we need to address ways to grow our supply, to meet our future demand levels.

There have been significant changes in environmental factors, water infrastructure, the operating environment and knowledge in the 13 years since we last planned for our region's long-term water security. Those changes, combined with a steadily growing Central Coast community, and the current review of the Lower Hunter Water Security Plan by our neighbouring region, mean it is important to review our long-term water plans.

We're developing a plan that will secure the Coast's water supply for future generation – the Central Coast Water Security Plan (CCWSP). This will help our collaborative work with Hunter Water and the Department of Planning Industry and Environment to make sure both the Central Coast and Lower Hunter regions have water strategies that can work side by side.

We're in the process of drafting the plan, which will be published for final community feedback in late 2021. All the feedback we've received from the community will be considered alongside other ongoing investigations, modelling and analysis.

After public exhibition, the plan will be finalised and provided to the NSW Department of Industry and Environment for approval.

2.2 Background

The Central Coast has the third largest urban water supply system in New South Wales, after Sydney and the Hunter region. The area has three dams, three weirs, three water treatment plants, over 50 reservoirs and more than 2,200 kilometres of water pipelines. Water is also transported into the system by the Hunter Connection, a two-way pipeline that provides additional water for operational reasons, or during drought, for both the Central Coast and the Hunter region.

The region is a major growth area with the population expected to increase almost 35% by 2050. There are currently permanent 'water wise rules' in place to conserve water as well as a voluntary daily water usage target of 150 litres per person.

Council is developing a Central Coast Water Security Plan (CCWSP) that will establish the long-term strategy for water security for the Central Coast and in order to ensure that the strategy reflects the values and preferences of the community, and meets the Department of Planning Industry and Environment (DPIE) guidelines.

Between December 2020 and April 2021 Central Coast Council sought community feedback on the CCWSP – our plan to secure the Coast's water supply for future generations.

Woolcott Research & Engagement was commissioned to carry out a deliberative engagement program amongst customers.

They took a representative sample of the Central Coast community on a journey to learn about their water values and educate them on the different water supply and demand options being considered. Five portfolios – or groups of options – were presented to this group and we set out to learn what a representative sample of the Coast community's preferences were.

This was achieved over three phases of community consultation – consisting of deliberative forums and in-depth phone interviews in December 2020, and February and April 2021.

During the second and third phases of community consultation, we also ran two online opt-in surveys (available to anyone to fill in), from 8 February to 21 March 2021, and from 19 April to 2 May 2021.

3 Engagement approach

3.1 Purpose of engagement

The overriding objective of the engagement program was to explore the level of knowledge, attitudes and preferences amongst Central Coast Council customers regarding water, sewerage and drainage supply and demand in the future.

The more specific objectives included, to:

- understand water literacy and behaviour within the community
- identify customer values regarding current and future water management
- understand the preferred balance between future investment and acceptance of risk
- explore attitudes to water restrictions
- understand acceptability of water restrictions and trade offs
- understand preferences for considerations for decision making for future water management
- gather and understand preferences on water supply and demand options
- gather and understand support levels on water portfolios
- build awareness of the CCWSP in the broad community.

The community's voice has been incorporated into Council's overall decision-making tool for the CCWSP. Inclusion of the community's preferences and values are also a requirement of the NSW Government's Integrated Water Cycle Management framework.

3.2 Our engagement framework

Consultation has been designed in accordance with Council's Engagement Framework. This framework is available to view at <https://www.yourvoiceourcoast.com/Central-Coast-CouncilEngagement-Framework>

3.3 How we consulted

The representative engagement program

The program involved a deliberative engagement approach which included qualitative and quantitative techniques. The approach was designed to give participants the time and information to consider issues in-depth, make the required trade-offs and then arrive at considered outcomes.

The technique aimed to provide:

- **true representation:** participants were recruited to ensure that they reflect the actual demographics of the population rather than through self-selection
- **deliberation:** participants were given time, information and the opportunity to discuss with others with diverse backgrounds and viewpoints
- **informed outcomes:** the provision of clear and accessible information and access to experts meant that participants were educated on the issues in order to grapple with complex trade-offs, think about future scenarios and ultimately arrive at informed recommendations
- **inclusivity:** anyone who wanted to contribute was able to do so
- **objectivity:** independent facilitation and true representation meant that the outcomes stand up to outside scrutiny.

The work adhered to The Research Society and International Association of Public Participation (IAP2) Core Values and Codes of Ethics and the techniques spanned the range of the IAP2 engagement spectrum.

3.3.1.1 COVID-19 impact

Due to the existing climate regarding COVID-19, Woolcott Research & Engagement continued to adhere to strict health guidelines, especially in this case, regarding the gathering of large groups.

The traditional 'in-person' deliberative format was moved to an online layout, utilising the Zoom platform to conduct large scale group meetings. This allowed for the delivery of information in a larger group setting, as well as smaller group discussions in 'break-out rooms' that gave researchers the ability to gather more in-depth feedback.

For participants who felt they were unable to join via Zoom due to technical illiteracy or other issues, we conducted several in-depth telephone interviews.

Indigenous engagement

A crucial component of developing the CCWSP is reaching out to our Indigenous community on the Coast and ensuring their voice and values are heard.

We have undertaken a separate process of consultation for this, specifically targeting the Indigenous community, to understand local and national Indigenous water values and how they could impact our final portfolio of works.

However, as this engagement is ongoing it will be summarised in a separate consultation report, which will be available to view online later this year – once the public exhibition period has closed, and all data has been processed.

Deliberative forum and phone interviews – round 1

This phase consisted of three community deliberative engagement forums via Zoom video conferencing and ten telephone in-depth interviews amongst residents who were unable to participate online.

Two smaller forums (of approximately 9-12 people) were conducted amongst vulnerable residents and small to medium enterprise (SME) owners/managers, and one larger forum (approximately 40 participants) was conducted amongst Council residents.

This first round of forums and in-depth interviews were conducted between 3-16 December.

The objectives of this first round of forums and phone interviews was to:

- gain a greater understanding of water literacy and behaviour within the community
- identify customer values regarding current and future water management
- explore attitudes to water restrictions and their impact on the community
- gauge level of acceptability of various water restrictions and behaviour expectations.

This method aimed to eliminate self-selection bias (where an individual chooses to participate in the consultation and may lead to a biased sample).

To ensure that the results from the forums were as representative as possible, post-weighting of the data was conducted by age. It follows that most of the data presented in the sections below are weighted scores.

The results of this can be viewed in 4.1.

3.3.1.2 Online forums

The three forums comprised of n=61 participants who live in the Council area. Residents were screened during recruitment to ensure they were representative in terms of age, gender, with further screening questions such as incidence of dwelling type, income level, being culturally and linguistically diverse (CALD), and identifying as being Aboriginal or Torres Strait Islander.

Table 1: Forum 1 participants

Location	Date	Participants
Financially vulnerable residents	3rd December 2020	N=12†
Small – Medium Enterprise (SME) owners/managers	8th December 2020	N=9†
Residents	10th December 2020	N=40†

† Unweighted data

The forums consisted of a stimulating mix of presentations from Council executives, 'break-out room' discussions, participant response polling sessions, along with a 'pub' style quiz. There were 7-8 participants in each pre-assigned breakout room. The forums ran from 6-7.40pm.

For each forum Woolcott Research & Engagement provided a lead facilitator who chaired the sessions and managed the flow and timing, as well as two to five breakout room facilitators and a technical support staff member. Woolcott facilitators ensured that all issues were covered in the break-out discussions and that everyone had the opportunity to express their views.

Polling was also included whereby participants were able to answer questions shown on screen, with results given in real time. A copy of the proforma used by the facilitators is in **Appendix A**.

Each table included a mix of demographics in terms of age and gender.

3.3.1.3 Telephone In-depths

To ensure inclusiveness of people who were not be able to participate in online forums (in particular older people and those with limited access to the internet) an additional n=10 telephone in-depth interviews were conducted amongst residents of the Central Coast.

Interviews were conducted via phone by senior executives of Woolcott Research & Engagement. The Discussion Guide for interviews was adapted from the forum proforma.

3.3.1.4 Recruitment and promotion of activities

All potential participants for both the forums and in-depth interviews were recruited using a range of techniques, including:

- a market research recruiter (Sweeny Research) who has a range of people on its database who have expressed an interest in participating in market research studies
- an advertisement on social media asking people to register their interest
- via Council's Your Voice Our Coast online engagement platform
- via in-house telephone recruitment amongst a random sample of Central Coast residents and small businesses.

In line with standard engagement practices, research participants were provided with a gift voucher as a token of appreciation for attending a Zoom forum or conducting a telephone in-depth interview. At the request of Council and because of financial constraints, this amount was reduced from \$100 to \$50 (and from \$150 to \$100 for the SME owners/managers). As mentioned a screener questionnaire was administered (**Appendix B**) to ensure that participants were representative of residents in terms of age and gender, however the recruitment of younger residents (under 40 years) was very challenging – potentially as a result of the lower incentive payment and the research being conducted in early December which is a very busy time of year. Consequently, a slightly older age profile resulted, therefore as mentioned, results have been post-weighted by age, to reflect the age profile of the Central Coast region.

An outline of the demographic characteristics of forum and in-depth interview participants is detailed below.

As shown in the tables below, participants were evenly distributed in terms of gender and two thirds were aged 50 years and over. One in ten participants spoke a language other than English at home or with family members, and there was a spread of household income ranges. The majority

were property owners (93%) as opposed to renters (7%), lived in a stand-alone house or dwelling, and as such received their water/sewerage bills from Council rather than a body corporate.

Table 2: Gender and Age (Forum 1 and in-depth interviews)

	Total (%)	Forum 1 (Vulnerable residents)* (%)	Forum 2 (SMEs)* (%)	Forum 3 (Residents) (%)	Phone in-depth interviews* (%)
GENDER					
Male	51	27	70	54	70
Female	49	73	30	46	30
AGE					
Under 50 years	52	75	50	44	-
50 years or over	48	25	50	66	100

Which of the following age groups best describes you?

Base: All forum 1 and in-depth participants (n=71); Financially vulnerable (n=12*); SMEs (n=9*); Residents (n=40); Phone depths (n=10*) **WEIGHTED DATA**

*WARNING: Small base size

Table 3: CALD and ATSI status (Forum 1 and in-depth interviews)

	Total (%)	Forum 1 (Vulnerable residents)* (%)	Forum 2 (SMEs)* (%)	Forum 3 (Residents) (%)	Phone in-depth interviews* %
CALD					
Yes	10	11	35	6	-
No	90	89	65	94	100
ATSI					
No	98	10	93	98	100
Prefer not to say	2	-	7	2	-

Table 4: Income (Forum 1 and in-depth interviews)

	Total (%)	Forum 1 (Vulnerable residents)* (%)	Forum 2 (SMEs)* (%)	Forum 3 (Residents) (%)	Phone in-depth interviews* %
INCOME					
Less than \$41,600	15	20	-	6	70
Between \$41,600 and \$78,000	14	31	17	8	10
Between \$78,000 and \$104,000	17	11	32	19	-
Between \$104,000 and \$156,000	25	22	15	33	-
More than \$156,000	14	11	17	14	10
Prefer not to say	15	5	18	19	10

Do you speak a language other than English at home or with family members? / ATSI Status

What is your approximate annual household income?

Base: All forum 1 and in-depth participants (n=71); Financially vulnerable (n=12*); SMEs (n=9*); Residents (n=40); Phone depths (n=10*) **WEIGHTED DATA**

*WARNING: Small base size

Table 5: Property ownership, type of dwelling and billing

	Total (%)	Forum 1 (Vulnerable residents)* (%)	Forum 2 (SMEs)* (%)	Forum 3 (Residents) (%)	Phone in-depth interviews* %
PROPERTY OWNERSHIP					
Own/co own property (incl. mortgage)	93	100	82	96	80
Renting property	7	-	18	4	20
DWELLING TYPE					
Stand-alone house or dwelling	91	95	75	94	90
Townhouse or semi	3	-	-	4	10

Apartment or unit complex	2	4	7	-	-
Other	3	-	18	2	-

WATER/SEWERAGE BILLING

Receives bill from Central Coast Council	94	100	75	97	90
Received bill from body corporate	4	-	25	-	10
No response	1	-	-	3	-

Do you... / Do you line in a... / Do you receive water/sewerage bills from Council and/or your body corporate?

Base: All forum 1 and in-depth participants (n=71); Financially vulnerable (n=12); SMEs (n=9*); Residents (n=40); Phone depths (n=10*)*

**WARNING: Small base size*

Deliberative forum and phone interviews – round 2

This second phase consisted of two community deliberative engagement forums via Zoom video conferencing and ten telephone in-depth interviews amongst residents who were unable to participate online.

This second round of forums and in-depth interviews were conducted in the last week of February 2021.

The objectives of this second round of forums and phone interviews were to:

- confirm and rate the importance of the water values generated in the first-round engagement
- explore reactions and level of support for Council considering a series of nine water supply and demand options for the future
- explore willingness to pay for project environmental offsets and two different types of rainwater tanks.

This method aimed to eliminate self-selection bias (where an individual chooses to participate in the consultation and may lead to a biased sample).

The results of this can be viewed in 4.2.

3.3.1.5 Online forums

The two forums comprised of n=29 and n=46 participants respectively who live in the Central Coast Council area. One of the forums included a sub-group of small-medium enterprises (SMEs) decision makers and one had a sub-group of financially vulnerable residents.

Table 6: Forum participants

Location	Date	Participants
Residents and SME owners / managers	23 rd February 2021	N=29
Residents and financially vulnerable residents	25 th February 2021	N=46

The forums consisted of a stimulating mix of presentations from Council executives, 'break-out room' discussions and participant response polling sessions. There were 7-8 participants in each pre-assigned breakout room. The forums ran from 6-7.40pm.

For each forum Woolcott Research & Engagement provided a lead facilitator who chaired the sessions and managed the flow and timing, as well as breakout room facilitators and a technical support staff member. Woolcott facilitators ensured that all issues were covered in the break-out discussions and that everyone had the opportunity to express their views.

Polling was also included whereby participants were able to answer questions shown on screen, with results given in real time. A copy of the proforma used by the facilitators is in **Appendix A**.

3.3.1.6 Telephone In-depths

To ensure inclusiveness of people who were not be able to participate in online forums (in particular older people and those with limited access to the internet) an additional n=10 telephone in-depth interviews were conducted amongst residents of the Central Coast.

Interviews were conducted via phone by senior executives of Woolcott Research & Engagement. The discussion guide for interviews was adapted from the forum proforma.

3.3.1.7 Recruitment and promotion of activities

All participants who attended the first round of forums were contacted and asked to participate in the second round. The vast majority agreed to participate again however extra participants were also recruited via a range of techniques, including:

- a market research recruiter who has a range of people on its database who have expressed an interest in participating in market research studies
- an advertisement on social media asking people to register their interest
- via in-house telephone recruitment amongst a random sample of Central Coast residents and small businesses.

The additional participants were screened during recruitment to ensure they were representative in terms of age, gender, with further screening questions such as incidence of dwelling type, income level, being culturally and linguistically diverse (CALD), and identifying as being Aboriginal or Torres Strait Islander.

In line with standard engagement practices, research participants were provided with a gift voucher as a token of appreciation for attending a Zoom forum or conducting a telephone in-depth interview. At the request of Council and because of financial constraints, this amount was reduced from \$100 to \$50 (and from \$150 to \$100 for the SME owners/managers). As mentioned, a screener questionnaire was administered to ensure participants were representative of residents in terms of age and gender. The recruitment screener was the same one used for the first round of engagement and a copy of it can be found in **Appendix A** of the Round 1 report.

An outline of the demographic characteristics of forum and in-depth interview participants is detailed below. As shown in the tables below, participants across the whole project were evenly distributed in terms of gender and under and over 50 years of age. In that respect, there was no requirement for weighting of the polling results.

One in ten participants spoke a language other than English at home or with family members, and there was a spread of household income ranges. The majority were property owners (93%) as opposed to renters (7%) and lived in a stand-alone house or dwelling.

Table 7: Gender; Age; CALD and Aboriginal and Torres Strait Islander (Forum 2 and in-depth interviews)

	Total (n=85) (%)	Forum 1 (Including Vulnerable residents) n=29* (%)	Forum 2 (Including SMEs)* n=46 (%)	Phone in-depth interviews* n=10 (%)
GENDER				
Male	51	52	47	70
Female	49	48	53	30
AGE				
Under 50 years	52	37	69	-
50 years or over	48	63	31	100
CALD				
Yes	10	15	9	-
No	90	85	91	100
Aboriginal and Torres Strait Islander				
No	97	96	98	100
Yes	2	-	2	-
Prefer not to say	1	4	0	-

*WARNING: Small base size

Table 8: Income and property ownership (Forum 2 and in-depth interviews)

	Total (%)	Forum 1 (including Vulnerable residents)* (%)	Forum 2 (including SMEs)* (%)	Phone in-depth interviews* (%)
INCOME				
Less than \$41,600	13	11	13	6
Between \$41,600 and \$78,000	10	0	16	8

Between \$78,000 and \$104,000	26	30	24	19
Between \$104,000 and \$156,000	21	26	18	33
More than \$156,000	18	11	22	14
Prefer not to say	13	22	7	19

PROPERTY OWNERSHIP

Own/co own property (incl. mortgage)	93	88	95	100
Renting property	7	12	6	-

DWELLING TYPE

Stand-alone house or dwelling	87	85	87	100
Townhouse or semi	5	4	7	-
Apartment or unit complex	8	11	7	-
No response	1	-	-	3

*WARNING: Small base size

Water options opt-in survey

To build awareness of this project we also had a survey available online from 8 February to 21 March 2021.

The survey asked participants to review the factsheets or watch the seven-minute video on the three demand-side options and six supply side options before completing the survey.

In total 210 people completed this survey.

A note about sampling bias: This online survey was 'opt-in', which means participants proactively sought to complete the surveys as opposed to a sample or respondents being selected to more accurately reflect and represent the population makeup of the Central Coast community.

3.3.1.8 Survey participants

Table: Age, Aboriginal and Torres Strait Islander, and interest in project (water options opt-in survey)

Survey participants	Number of participants	Percentage
AGE (207 participants responded)		
Under 50 years	56	27%
50 years or over	151	74%
Aboriginal and Torres Strait Islander (209 participants responded)		
No	188	90%
Yes, Aboriginal	7	3%
Yes, Torres Strait Islander	0	0%
Prefer not to say	14	7%
Interest in project (194 participants responded)		
I am a resident of the area	183	95%
I work in the area	6	4%
I am a commercial property owner in the area	2	1%
I am an owner/operator of a business in the area	2	1%

Participants primary suburb of residence

Bateau Bay	1%	Kanwal	1%	Somersby	1%
Bensville	1%	Kariong	1%	Springfield	1%
Berkeley Vale	2%	Killcare Heights	1%	Tacoma	1%
Blue Haven	1%	Kincumber	2%	Terrigal	3%
Booker Bay	1%	Koolewong	1%	The Entrance	1%
Budgewoi	2%	Lake Haven	1%	Toukley	2%
Buff Point	2%	Lake Munmorah	2%	Tumbi Umbi	2%
Charmhaven	1%	Lisarow	1%	Umina Beach	5%
Chittaway Bay	1%	Long Jetty	3%	Wadalba	2%
Chittaway Point	1%	MacMasters Beach	1%	Wamberal	1%
Copacabana	2%	Mannering Park	1%	Warnervale	1%
Daleys Point	1%	Mardi	1%	West Gosford	2%
East Gosford	1%	Mount Elliot	1%	Woongarah	1%
Erina	2%	Narara	1%	Woy Woy	3%
Ettalong Beach	3%	Niagara Park	1%	Wyoming	1%
Forresters Beach	1%	Norah Head	1%	Wyong	3%
Fountaindale	1%	Noraville	1%	Wyongah	1%
Gorokan	1%	North Avoca	1%		
Gosford	3%	Ourimbah	1%		
Green Point	1%	Pearl Beach	1%		
Halekulani	1%	Phegans Bay	1%		
Hamlyn Terrace	1%	Point Clare	3%		
Holgate	1%	San Remo	1%		
Horsfield Bay	1%	Saratoga	2%		
Jilliby	1%	Shelly Beach	1%		

3.3.1.9 Promotion of activities

We carried out promotion of the consultation to ensure the community and stakeholders were aware of the opportunity to participate.

Your Voice Our Coast website	<ul style="list-style-type: none"> The project page was updated with a link to the survey, factsheets and FAQs 8 February – 21 March (consultation): 1,038 page visits
Survey	<ul style="list-style-type: none"> Understanding community preferences for water supply and demand option types This survey collected data between 8 February – 21 March A copy of the survey can be found here
Media Releases	<ul style="list-style-type: none"> Council looks to residents to help navigate our water future Date issued: 8 February 2021 A copy of the media release can be found in Appendix C

Coast Connect articles	<ul style="list-style-type: none"> • Electronic newsletters reaching 11,000+ residents <ul style="list-style-type: none"> ○ 9 February 2021: Coast Connect e-newsletter article ○ 3 March: Coast Connect e-newsletter link to survey ○ 10 March: Coast Connect e-newsletter article • Copies of the articles can be found in Appendix D
Print advertising	<ul style="list-style-type: none"> • Advertisements were placed in: <ul style="list-style-type: none"> ○ Central Coast Chronicle: 10 February 2021 ○ Pelican Post: 11 February 2021 ○ Coast Community News: 12 February 2021 • A copy of the advertisement can be found in Appendix E
Digital advertising	<ul style="list-style-type: none"> • Paid advertisements on Facebook and Instagram: <ul style="list-style-type: none"> ○ ran from 16-19 February ○ two sets of ads, one series targeted at home and business owners on the Coast, and the other targeted at the broader Coast community ○ unique reach of 3,457 and 5,016 impressions • Copies of the advertisements can be found in Appendix F
Electronic Direct Mails (EDMs)	<ul style="list-style-type: none"> • Two EDMs were distributed during this campaign to those who had signed up to receive project updates <ul style="list-style-type: none"> ○ 9 February 2021 ○ 18 March 2021 • Copies of the EDMs can be found in Appendix G
Stakeholder emails and letters	<ul style="list-style-type: none"> • Emails sent to 36 stakeholders on 1 March 2021 • Letters sent to 43 stakeholders on 2 March 2021 • A copy of the email can be found in Appendix H
Radio advertising	<ul style="list-style-type: none"> • Radio advertising, running from 8 February – 6 March • Reaches 140,000 residents • A copy of the radio script can be found in Appendix I
Social media	<ul style="list-style-type: none"> • One post on Facebook on 17 February which reached 8,846 people and had 25 reactions, 43 comments and 1 share • One post on Instagram on 17 February which reached 2,376 people and had 30 likes • One post on Twitter on 17 February 2021 which was viewed 62 times, had 8 engagements and 590 impressions • Copies of this post can be found in Appendix J

Deliberative forum and phone interviews – round 3

This third phase consisted of two community deliberative engagement forums via Zoom video conferencing and ten telephone in-depth interviews amongst residents who were unable to participate online.

This third round of forums and in-depth interviews were conducted between 19-30 April 2021.

The objectives of this third and final round of forums and phone interviews was to:

- explore reactions to a portfolio approach for water supply and demand options for the future
- assess reactions to a series of five portfolios of water supply and demand methods
- obtain level of support for each of these portfolios
- explore reactions to an Emergency Drought Management Plan
- obtain level of support for two Level of Service scenarios.

The results of this can be viewed in section 4.4.

3.3.1.10 Online forums

The two forums comprised of n=24 and n=38 participants respectively who live in the Central Coast Council area. One of the forums included a sub-group of small-medium enterprises (SMEs) decision makers and one had a sub-group of financially vulnerable residents.

Table 9: Round 3 Forum Participants

Location	Date	No. of Participants
Residents and financially vulnerable residents	20 th April 2021	N=24
Residents and SME owners / managers	22 nd April 2021	N=38

The forums consisted of a stimulating mix of presentations from Council executives, 'break-out room' discussions and participant response polling sessions. There were 6-8 participants in each pre-assigned breakout room. The forums ran from 6-7.40pm.

For each forum Woolcott Research & Engagement provided a lead facilitator who chaired the sessions and managed the flow and timing, as well as breakout room facilitators and a technical support staff member. Woolcott facilitators ensured that all issues were covered in the break-out discussions and that everyone had the opportunity to express their views.

Polling was also included whereby participants were able to answer questions shown on screen, with results given in real time. A copy of the proforma used by the facilitators is in **Appendix A**.

3.3.1.11 Telephone In-depths

To ensure inclusiveness of people who were not be able to participate in online forums (in particular older people and those with limited access to the internet) an additional n=10 telephone in-depth interviews were conducted amongst residents of the Central Coast.

Interviews were conducted via phone by senior executives of Woolcott Research & Engagement. The Discussion Guide for interviews was adapted from the forum proforma.

3.3.1.12 Recruitment and promotion of activities

All participants who attended the first and or second round of forums were contacted and asked to participate in the third round. The vast majority agreed to participate again.

All participants were initially screened during recruitment to ensure they were representative in terms of age, gender, with further screening questions such as incidence of dwelling type, income level, being culturally and linguistically diverse (CALD), and identifying as being Aboriginal or Torres Strait Islander. The recruitment screener was the same one used for the first round of engagement and a copy of it can be found in **Appendix B** of the Round 1 report

In line with standard engagement practices, research participants were provided with a gift voucher as a token of appreciation for attending a Zoom forum or conducting a telephone in-depth interview. At the request of Council and because of financial constraints, this amount was reduced from \$100 to \$50 (and from \$150 to \$100 for the SME owners/managers). As mentioned a screener questionnaire was administered to ensure that participants were representative of residents in terms of age and gender, however the recruitment of younger residents (under 40 years) was very challenging - potentially as a result of the lower incentive payment and the negative publicity that Council had received in recent months. Consequently, a slightly older age profile resulted, therefore as mentioned, results have been post-weighted by age, to reflect the age profile of the Central Coast Region.

An outline of the demographic characteristics of forum and in-depth interview participants is detailed below. As shown in the tables below, participants across the whole project were evenly distributed in terms of gender.

Just under one in ten participants spoke a language other than English at home or with family members, and there was a spread of household income ranges. The majority were property owners (88%) as opposed to renters (12%) and lived in a stand-alone house or dwelling (89%).

Table 10: Gender; Age; CALD and Aboriginal and Torres Strait Islander (Round 3 Forums and in-depth interviews)

*WARNING: Small base size

	Total (n=72) (%)	Forum 1 (Including vulnerable residents) n=24 (%)	Forum 2 (Including SMEs)* n=38 (%)	Phone in-depth interviews* n=10 (%)

GENDER				
Male	45	51	41	50
Female	55	49	59	50
AGE				
Under 50 years	51	49	62	-
50 years or over	49	51	38	100
CALD				
Yes	7	9	6	10
No	93	91	94	90
Aboriginal and Torres Strait Islander				
No	98	100	97	100
Yes – Aboriginal	2	-	3	-
Yes – Torres Strait Islander	2	-	3	-

Table 11: Income and property ownership (Round 3 Forums and in-depth interviews)

	Total (n=72) (%)	Forum 1 (Including vulnerable residents) n=24 (%)	Forum 2 (Including SMEs)* n=38 (%)	Phone in-depth interviews* n=10 (%)
INCOME				
Less than \$41,600	13	12	8	40
Between \$41,600 and \$78,000	18	18	17	20
Between \$78,000 and \$104,000	21	26	22	-

Between \$104,000 and \$156,000	23	18	29	10
More than \$156,000	14	10	17	10
Prefer not to say	11	16	7	20
PROPERTY OWNERSHIP				
Own/co own property (incl. mortgage)	88	82	89	100
Renting property	12	18	11	-
DWELLING TYPE				
Stand-alone house or dwelling	89	95	86	90
Townhouse or semi	3	-	6	-
Apartment or unit complex	7	5	8	10

*WARNING: Small base size

Water portfolios opt-in survey

To build awareness of this project we also had a survey available online from 19 April to 2 May 2021.

The survey asked participants to review the information on the Your Voice Our Coast project page about each of the five portfolios of water supply and demand options – as no one option works in isolation – before completing the survey.

In total 98 people completed this survey.

A note about sampling bias: This online survey was 'opt-in', which means participants proactively sought to complete the surveys as opposed to a sample or respondents being selected to more accurately reflect and represent the population makeup of the Central Coast community.

3.3.1.13 Survey participants

Table: Age, Aboriginal and Torres Strait Islander, and interest in project (water options opt-in survey)

Survey participants	Number of participants	Percentage
AGE (86 participants responded)		
Under 50 years	17	20%
50 years or over	69	80%
Aboriginal and Torres Strait Islander (86 participants responded)		
No	78	91%
Yes, Aboriginal	1	1%
Yes, Torres Strait Islander	0	0%
Prefer not to say	7	8%
Interest in project (93 participants responded – participants could select more than one option)		
I am a resident of the area	82	88%
I work in the area	12	13%
I am an owner/operator of a business in the area	4	4%
I am a commercial property owner in the area	1	1%

Other	3	3%
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Participants primary suburb of residence

Bateau Bay	2%	Hamlyn Terrace	1%	Summerland Point	1%
Bensville	2%	Kanwal	1%	Tacoma	1%
Berkeley Vale	4%	Kariong	1%	Terrigal	1%
Blue Haven	1%	Lake Haven	1%	Toowoan Bay	1%
Budgewoi	2%	Lisarow	4%	Toukley	4%
Chittaway Bay	1%	Long Jetty	1%	Umina Beach	6%
Chittaway Point	1%	Mardi	1%	Wamberal	1%
Copacabana	1%	Noraville	2%	Woy Woy	5%
East Gosford	2%	North Avoca	1%	Wyoming	2%
Empire Bay	1%	Ourimbah	1%	Wyong	1%
Erina	1%	Point Clare	2%	Wyongah	1%
Ettalong Beach	2%	San Remo	1%	Other	5%
Forresters Beach	2%	Saratoga	1%		
Gorokan	1%	Shelly Beach	2%		
Gosford	4%	Somersby	1%		
Green Point	2%	Springfield	1%		

3.3.1.14 Promotion of activities

We carried out promotion of the consultation to ensure the community and stakeholders were aware of the opportunity to participate.

Your Voice Our Coast website	<ul style="list-style-type: none"> The project page was updated with a link to the survey, portfolios and FAQs 19 April – 2 May (consultation): 708 page visits
Survey	<ul style="list-style-type: none"> Community support for our water portfolios This survey collected data between 19 April – 2 May A copy of the survey can be found here
Media Releases	<ul style="list-style-type: none"> Residents to help Council plan water supply for future generations Date issued: 21 April 2021 A copy of the media release can be found in Appendix C
Coast Connect articles	<ul style="list-style-type: none"> Paid editorial, with a total print run of 170,000: <ul style="list-style-type: none"> 21 April 2021: Central Coast Chronicle 22 April 2021: Pelican Post 23 April 2021: Coast Community News Electronic newsletters reaching 11,000+ residents

	<ul style="list-style-type: none"> ○ 21 April 2021: Coast Connect e-newsletter article ● Copies of the articles can be found in Appendix D
Print advertising	<ul style="list-style-type: none"> ● Newspaper advertising with a total print run of 170,000 ● Advertisements were placed in: <ul style="list-style-type: none"> ○ Central Coast Chronicle: 14 April 2021 ○ Coast Community News: 16 April 2021 ○ Pelican Post: 22 April 2021 ● A copy of the advertisement can be found in Appendix E
Digital advertising	<ul style="list-style-type: none"> ● Advertising through YouTube: <ul style="list-style-type: none"> ○ This educational water video on the water supply and demand options was advertised on YouTube from 19 April – 2 May 2021 ○ It received 271 views and 534 impressions ● Advertising through Google: <ul style="list-style-type: none"> ○ A series of advertisements ran through Google from 19 April – 2 May 2021 – targeted at Central Coast residents ○ They received 339 clicks and 269,000 impressions ○ Copies of these advertisements can be found in Appendix F
Electronic Direct Mails (EDMs)	<ul style="list-style-type: none"> ● An EDM was distributed during this campaign to those who had signed up to receive project updates: <ul style="list-style-type: none"> ○ 20 April 2021 ● A copy of the EDM can be found in Appendix G
Stakeholder emails	<ul style="list-style-type: none"> ● Email sent to 36 stakeholders on 22 April 2021 ● A copy of the email can be found in Appendix H

4 What we heard

A representative sample of the Central Coast community was taken on a journey to learn about their water values and educate them on the different water supply and demand options being considered. Five portfolios – or groups of options – were presented to the community and we set out to learn what a representative sample of the Coast community's preferences were.

Three phases of community consultation consisting of deliberative forums and in-depth phone interviews were conducted in December 2020, and February and April 2021. As these forums and in-depth phone interviews were of a representative sample of the Central Coast's demographic, the data we received from these was used to inform the development of the CCWSP.

During the second and third phases of community consultation, we also ran two online opt-in surveys from 8 February to 21 March 2021, and from 19 April to 2 May 2021. However, these surveys were available to anyone to fill in, so the data we received from these surveys was not representative of the Central Coast. As such, these surveys were used to build awareness within the community and identify areas where future engagement and education would be of most value. This dataset will not directly inform the development and selection of the preferred portfolio within the CCWSP.

4.1 Method 1 – Deliberative forums and phone interviews, round 1

Current water usage behaviour

At the commencement of the forums, participants were welcomed by the Woolcott Research & Engagement Lead Facilitator, who also carried out the acknowledgement of country and explained the structure of the session and guidelines. A representative from Council was then introduced and they provided a brief presentation outlining the need for the CCWSP and an overview of the community engagement plan.

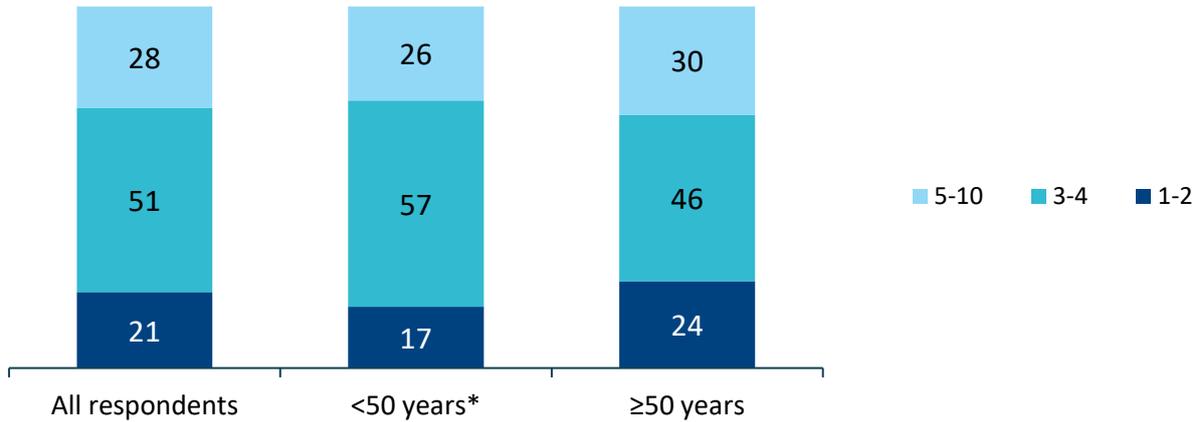
Following this, participants answered an initial set of polling questions regarding their attitudes to water usage, incidence of thinking about the source of their water and incidence of having a water tank.

Polling questions

4.1.1.1 Attitude to water usage

When participants were asked where they sat on a scale from 'I use as little water as I possibly can' to 'I use as much water as I want to and don't really worry about it', the majority (72%) gave a score of 4 or less suggesting that they were quite conscious about their water usage behaviour. Just over one quarter (28%) were closer to the 'I don't really worry about it' end of the scale. This was reasonably consistent for both of the two main age groups.

Figure 1: Percentage of attitude to water usage



Q. Where do you personally sit on a scale from 'I use as little water as I possibly can' to 'I use as much water as I want to and don't really worry about it'. Choose a number between 1-10 between these two statements, where a low score is you use as little as possible and a higher score is you use whatever water you need and don't worry about it.

Base: All forum 1 and in-depth participants who answered this question (n=66); <50 years (n=20*); ≥50 years (n=46)

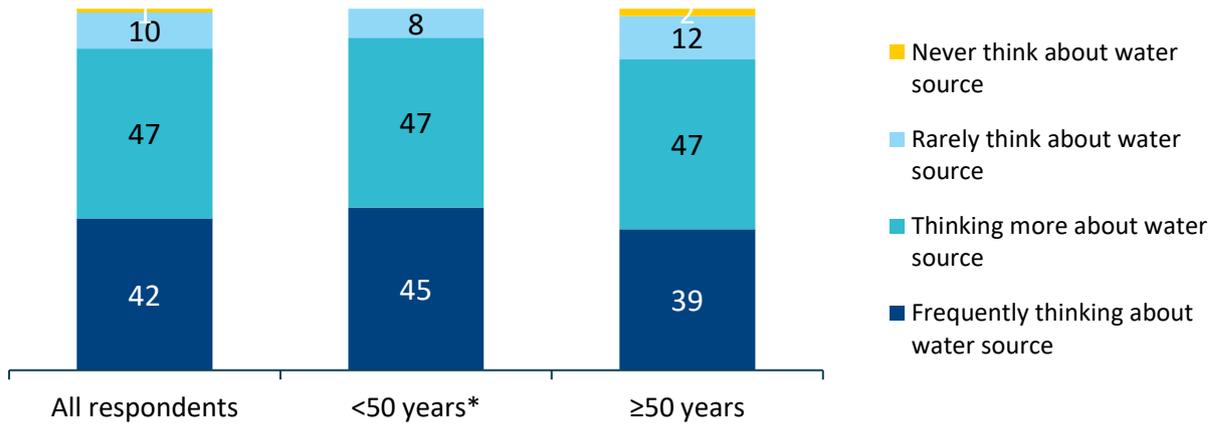
*WARNING: Small base size

Water source consciousness

Most participants appeared to be conscious of where their water came from, with more than two fifth thinking about it frequently. Approximately half (47%) also agreed that they were thinking about it more and more. Water source consciousness was reasonably consistent across the age groups.

Central Coast Water Security Plan: Consultation Report

Figure 2: Percentage of water source consciousness



Q. Which of the following statements do you identify with most?

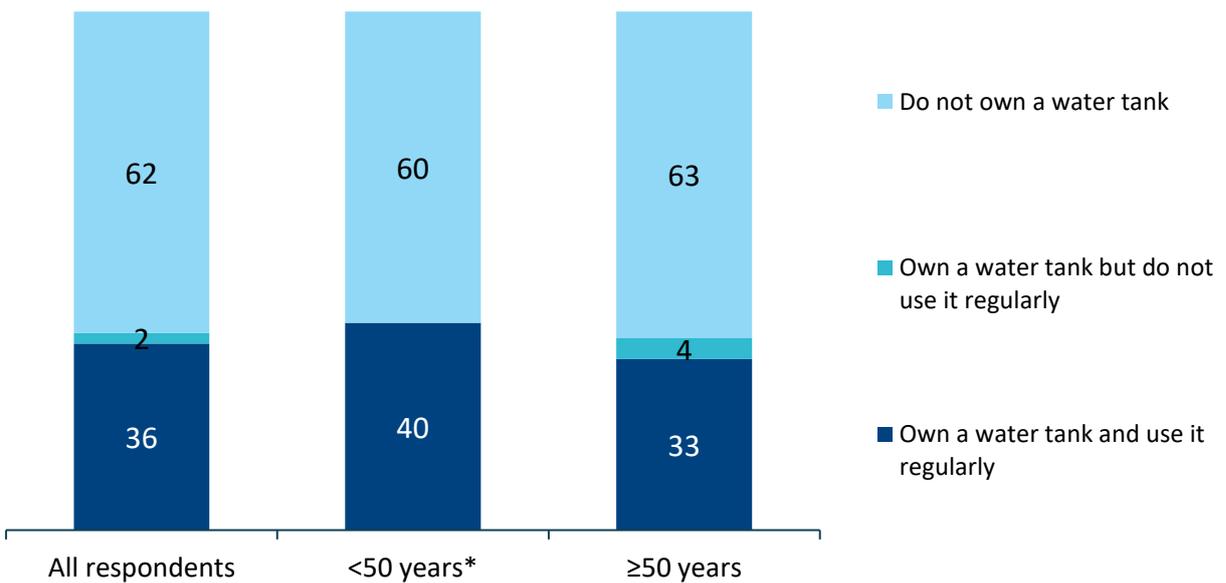
Base: All forum 1 and in-depth participants who answered this question (n=66); <50 years (n=20*); ≥50 years (n=46)

*WARNING: Small base size

Rainwater tank ownership and usage

Just over one third (38%) of participants had a water tank, with most owners using their tank regularly. Incidence of having a rainwater tank was consistent across the two age groups.

Figure 3: Percentage of rain water tank ownership and usage



Q. Do you have a rainwater tank?

Base: All forum 1 and in-depth participants who answered this question (n=66); <50 years (n=20*); ≥50 years (n=46)

*WARNING: Small base size

Current water usage

Following on from this was the first breakout session where participants initially introduced themselves and briefly outlined the nature of their household, dwelling type, incidence of having a garden, pool and water tank. The discussion continued around current water usage behaviour and the perceived importance of water in their daily lives. This included recent changes to perceptions about water and monitoring water usage and their perceived understanding of the role of Council regarding water.

Within the discussions there were many participants who mentioned that their attitude towards water usage had changed considerably as a result of the recent drought, water restrictions and bushfires. Many admitted that they had become a great deal more conscious of water use, where it came from and were more careful about not wasting water.

"Water is not a never-ending resource; we saw how quickly it went down last time. We should never take our eye off the ball. With the population growth we need to be aware of it." – Resident

"I generally tend to be more cautious of water usage since the drought. Since then, I've actively managed my own water usage and for my business...it's mainly driven by the drought, watching the news about dam levels going down was scary, so it's better to have water saving measures over the long term so it has a bigger impact." – SME owner/manager

"I don't think about water on day-to-day basis, but I do consider how I use water and I'm looking at having my washing machine connected to tank water.... I think environmental changes and bushfires have made it more important to us." – Resident

"I think things have changed. In our own business we have changed things over the years. We now pre-treat water before it goes back in the sewer, and we cool it down to below forty degrees.... after the drought I think people are looking at water differently." – SME owner/manager

Those with rainwater tanks or bore water appeared to be particularly conscious of not using 'town water' outdoors. Additionally, many who indicated that they had been raised on a farm also claimed to have always been very aware of water and claimed that they were particularly careful not to waste it.

"I'm careful and only use town water in the house, we use spear water in the garden." – Resident

"I was brought up in the country so we're always worried about water – in Western NSW where average rainfall is 10 inches per year." – Resident

It was agreed that while they may not always think about water and that it is often 'taken for granted', it was an extremely important natural resource that was essential for life and maintaining their lifestyle. Therefore, planning for the future supply of water was seen to be crucial, especially in the context of the recent water shortages and low dam levels experienced in the Central Coast and other areas of NSW.

"I was living up the coast when we got to about 10% in the millennium drought and that was scary – it was a bit of a wake-up call and the solutions had to be found quickly. It took 20 years to wake up and realise and we ended up with the link between Mangrove Mountain dam I don't want to see the lack of planning happen again." – Resident

"I don't think about it every day, but I know it's the most important thing, apart from oxygen, humans need." – Resident

"I have a rainwater tank and spear point pump. I use the pump to fill the swimming pool up and without those things we wouldn't have the garden." – Resident

While most SME owners/managers agreed that they thought about water more, some indicated that it was difficult for them to change their usage in the workplace. It was also suggested by some that their workplace usage was not very high compared to other sources such as mining and larger industrial use.

"I don't have a lot of choice, we have to use a lot of water, we can minimise it by using better tools and put a time limit on it but we can't do much about it." – SME owner/manager

It was generally well known amongst residents and SME owners/managers that Council were responsible for water supply in the area, simply because they received their water bill from Council. Some however clearly knew a bit more about Council's role and were interested in water supply methods.

"Yes, I knew it was the Council, the bill tells us how much we use." – Resident

*"Their role is basically everything, from gathering the fresh water, keeping it clean, making sure that there's access to that water along the coast as well as access to the sewer. It's managing that whole end to end process. The only thing I don't understand is the link to Hunter Water, what's the link doing? Do we send our water to them or do they send theirs to us or something like that?"
- Resident*

Water values

In this session, participants were transitioned to a second topic looking at the values around water or the aspects that Council needs to take into consideration when planning water for the future. This included discussion points such as water supply, wastewater disposal and water management. Woolcott moderators shared their screens within the breakout sessions and constructed a stylised 'values tree' as a way of stimulating thoughts and ideas.

It was interesting to observe that it was quite challenging for the moderators to keep participants on task during this session with many immediately citing their opinions of various water solutions or airing some of their concerns regarding water such as mining and large industries taking too much water, ground water depletion, over-development of the coast and insufficient use of water tanks.

However, in summary, the key values to emerge included:

- affordability – both costs to build and operate
- reliability/Long term yield (ensuring there is enough water to meet demand)
- environmental impact / Energy efficiency
- water quality
- empowerment (capturing more water at household/local level)/greater use of natural rainfall and run off
- efficiency/Reducing leakage/Using innovative solutions
- education/Increase awareness
- social impact / social equity.

4.1.1.2 Affordability – cost to build and operate

A very common theme to emerge during these discussions was the cost of the option being considered. Clearly participants felt that both the cost to Council and the subsequent cost to the community to build and operate various water supply options was a very important consideration and that future solutions needed to be good value for money over the long term.

"Cost of water – what are the cheapest and most expensive options." – SME owner/manager

"The cost of the solutions for example desalination is very expensive." – Resident

"Cost effectiveness – you can't balance one solution against the other unless you determine the effectiveness." – Resident

"Cost is a big one – it needs to be affordable." – Resident

4.1.1.3 Reliability / Long term yield (ensuring there is enough water to meet demand)

Another value to emerge was reliability or ensuring that whatever solution is implemented meets the long-term water needs of the growing Central Coast population and that water shortages are not experienced. Clearly the issue of not having enough water was forefront in the minds of many, following the severe drought, water shortages and water restrictions experienced in recent years.

Interestingly, the expanding population of the Central Coast area emerged as a concern for many participants, not only regarding ensuring there is enough water supply but also other aspects such as over-crowding, traffic congestion, pollution and over-development.

"Population growth - we have a constantly increasing population but not a constant growth in supply of water." – Resident

"I think we really need to keep in mind growing infrastructure so there's enough supply to meet the demand... it's all very well to keep approving these new parcels of land for building homes and low-medium density properties but will we have enough water? ... we need to understand the population growth rate and a strategic planning is a must." – Resident

"Sufficient water for the long term.... a long-term vision – not short term, with say 50 years in mind." – SME owner/manager

"The growing population – there are lots of buildings going up, and they all should have tanks. Is the extra amount of water considered when planning permission is given?" – Resident

"My concerns are the over-development of the coast, - you just drive around and it's horrendous to see all of the stuff that's being going up and the impact on the environment." – Resident

Akin to this was the idea of water risk management which was raised by some participants and felt to be important that Council considered risks such as flooding and water shortages, when planning for the future.

The term 'future proofing' was used by some participants to describe this value and the issue of how long it would take to build was also mentioned within the context of this theme, to ensure that there is sufficient water for everybody in the short term and long-term future.

"Risk management is the key thing for me – managing the risk of running out of water and thinking about what is the most desirable conditions you'd like to achieve then work to that." – Resident

"Timing is important, you don't want it to take a long time and not be ready when we need it." – Resident

It was important to participants that Council considered the reliability of the water source or to ensure that whatever source was selected was drought resistant. It was believed to be important to have a source or set of sources that do not rely totally on rainfall. In this respect many participants turned to offering water supply solution suggestions such as desalination and recycled water during these conversations.

Some participants used words such as 'resilience' and water security to describe this value.

"Demand is increasing, and we need long term planning, we talk about resilience, but we need sustainable solutions like drought strategies." – Resident

4.1.1.4 Environmental impact / Energy efficiency

Within the broad value of the environment impact there were many issues mentioned including climate change, sustainability, using energy efficient solutions, river catchment quality,

contamination of ground water, and the impact on wildlife. Clearly this was a very important issue for residents and SME decision makers and was raised in almost every breakout group.

In particular participants wanted to ensure that the waterways remained healthy and that the water quality in the river system was maintained. This was raised in relation to the mining industry as well as general use. It was also felt that Council needed to take into consideration climate change and the changing weather patterns when planning for the future, and they wanted less run-off and water wastage in the system.

"Taking account of the environment for any solution – it has to be environmentally sustainable." – Resident

"Ecological impacts of increased supply, for example, a larger dam has an impact on the environment." – Resident

"Another value is using what nature provides us with i.e., what we have already rather than trying to create more – like capturing more during rainy periods rather than building infrastructure to create more water." – Resident.

"Climate change – long periods of less rainfall, how will this be addressed in the future." – Resident

Water supply sources such as dams, desalination and recycled were mentioned within the context of ensuring the environmental impact is low, with many acknowledging that these methods were often met with controversy in communities as having a negative impact on the environment.

"I don't understand desal much – not sure of what it means for marine life, the environment, oceans... I know that energy consumption and health of the oceans is an issue raised with desal." – Resident

"Dams are our main water supply and they work well but not sure where another one would go – and not sure what can be done safety to ensure there is low environmental impact." – Resident

4.1.1.5 Water quality

Under the broad theme of water quality, participants commented that it is very important that water quality standards are maintained to a high level, with frequent references to the amount of fluoride and chlorine in the water, as well as the taste, smell and colour of the water. Interestingly there were also a few comments that suggested the colour of the water can sometimes be a bit brown.

"Water quality and ensuring community health is a big one." – Resident

"Quality of water – I've had brown water. People expect their water to be clean.... It could be to do with old pipes." – Resident

"Clean water - we get dirty brown water currently.... we're not getting value for money because we're getting brown water." – Resident

Water quality was also raised with respect to the environment and water quality of the dams, rivers and streams.

"Maintaining water quality – chemicals are not getting into the water, fertilisers etc." – Resident

There were some suggestions made in this respect around the community getting greater access to information about what is added to water and the water quality testing process.

"More information about water additives e.g., fluoride" – Resident

4.1.1.6 Empowerment (capturing more water at household/local level)/greater use of natural rainfall & run off

A common theme raised during this discussion session was the idea that more people (and businesses) should be capturing rainwater in tanks, or there should be more ways to capture stormwater for household and/or community use. While many participants had rainwater tanks, it was felt that 'the government' or Council should be encouraging more people by way of providing an incentive or rebate. While many were aware that new homes were required to have a rainwater tank, it was felt that it was expensive to install a tank and that more needed to be done to incentivise people to install them into existing houses, apartments and business premises.

Capturing and making greater use of the natural rainfall was felt to be an efficient and cost-effective method of reducing demand. It was also felt that residents and businesses should be taking greater responsibility for capturing water, suggesting that it was not just Council's role and that 'we' had a role to play as well.

"Adding water tanks to all houses even those already existing. It isn't an infinite resource, so we need to capture it better at household level." – Resident

"Stormwater harvesting - new technology needs to capture and reuse the water that is provided from the sky." – Resident

"Be self-sufficient. Encourage rainwater tanks and more storage of water" – SME owner/manager

"We need to capture as much rainwater as possible - every house should have a rainwater tank. At household level - we should all take responsibility. Council looks after the wider level, but we should all be responsible at the household level and do our own bit." – Resident.

"Mandate tanks – or incentivise people to get them like solar, it's a no brainer I think." – Resident

"Encourage industries to use more – they could catch their own water and become much more efficient and take the pressure off council." – Resident

4.1.1.7 Efficiency (reducing leakage)/Using innovative solutions

There was a sentiment expressed that we need to be more efficient in the use of our water resources by ensuring that leaks in the system are found and repaired quickly. It was felt to be important for Council to use the latest technology to move water around and ensure we are making the maximum use of water that is currently retained in the system or falling as rain. It was also suggested that people should be able to access their usage and monitor how much they used via real-time water usage technology.

"Efficient use of our water resources, like encouraging people to have rainwater storage, ways to distribute water - long term sustainable solutions and drought strategies and holistic management of the water." – Resident

"Future developments should use grey water or recycled water, use the latest technology available other places are doing it overseas." – Resident

"Technology - allow people to monitor use and use technology to find water leaks." – SME owner/manager

"The loss of water in the Central coast is enormous during wet periods. We need more storage space or maybe have two different types of water – one for drinking and one which includes run off. We need to grow our wastewater system." – Resident

"Wastage - we need to monitor how much water is wasted through leaky pipes." – Resident

4.1.1.8 Education/increase awareness

Educating the community and increasing awareness of where our water comes from, likely rainfall patterns in the future and how to conserve water were also felt to be important values raised by participants. Recycled water was mentioned as an area that people don't seem to know a lot about, that is, where and how it is currently being used, and the advantages and disadvantages of using it more in the future.

"The community needs to be further educated on water - the value of water, how to engage them. This is a good step but need to go wider too. On Facebook some of the comments show people aren't really educated about the issues and provide uninformed opinion." – Resident

"Public education of things like water bills and plugging leaks in the building, and how much water they are expected to need and use." – SME owner/manager

"Education about how precious it is – the earth is getting dryer, climate change, etc, education about the scarcity of water." – Resident

Further information was also thought to be needed about how to use grey water and how to make greater use of rainwater. Others felt that they lacked knowledge about all the different supply methods such as desalination plants and their impact on the environment. Some also suggested that Council needed to promote the quality of the water more to reassure people and stop them buying bottled water; and to educate tourists when they visit the region and ensure that they understand what water restrictions are in place and of the scarcity of water.

"Education programs to explain to people how easy it is to use other options, for example, where you can plumb in rainwater." – Resident

"There should be more education and information on how to use our grey water." – Resident

4.1.1.9 Social impact/equity

Another theme to emerge was around equity and ensuring that some community members are not using too much or wasting more than others. In particular this issue was raised in relation to the mining industry where many participants felt that the mines were potentially taking too much water out of the system, as well as other industries that use a lot of water, with suggestions for them to capture more water themselves at their own expense.

Some also raised equity in relation to swimming pools and large gardens and felt that if people had a pool or large garden, they should have a rainwater tank to maintain these assets.

"Water could be wasted in mining. They use a lot of water for mining. Will there be enough left for us? Extractive industries in general taking too much water" – Resident

"How much is the coal mine going to use and take out of the system? The proposed coal mine is going to use a lot from our aquifers and water supplies, they're proposing to put it back in but what assurances do we have" – Resident

Another further consideration raised by a couple of people was the aesthetics and how the water source looked in the community.

"Whether or not it is an eyesore - how something looks in the community" – Resident

Water supply and demand balance

A representative from Council presented the services and role that the Council plays in water supply and demand to participants. Topics included the water supply system, average residential demand and projected water demand in the future. As an interactive learning exercise, participants went to their breakout rooms to undertake a 'pub quiz' including questions on water cost, dam capacity, water restrictions, and water consumption. Following this exercise, participants returned to their breakout rooms to discuss their attitudes towards water restrictions.

4.1.1.10 Attitudes towards water restrictions

Impacts of drought

Participants were asked to think about their drought experiences, and to reveal the impact they felt drought had on themselves and the community.

Overall, many of the participants seemed to indicate that while there were some hardships experienced, they were not overly onerous. They discussed the sort of things that they did around the house, like letting gardens and lawns brown/die off, catching shower water, changing the way they used water (such as washing their car or boat with a bucket, or refraining from washing it at all), and changing their attitudes toward water (being more conscious of water use generally). The Central Coast was felt to be 'lucky' compared to other places in regional NSW.

However, others went further, and recalled the sort of emotional impact that the restrictions and general drought environment had on them and their family.

"It can create neighbourhood angst. It can promote unneighbourly thoughts when people are looking for what their neighbours may be doing wrong. So, it harms the community spirit" – Resident

"We had a teenage grandson living with us at the time. I had to harass him to get out of the shower numerous times. It can cause conflicts in a family" – Resident

"It was emotionally distressing. Even thinking about shortages for wildlife is distressing" – Resident

"I remember the Mangrove Creek levels were getting lower than 20% and very critical. It was getting scary for a while, before the pipeline was put in, it was very scary" – Resident

A few of the participants indicated that they weren't greatly impacted by the drought – suggesting that the restrictions that were put in place were more in line with their standard behaviour anyway.

"It didn't really impact me too much. I'm pretty good with how much water I use anyway" – Resident

"Yeah, we've always had short showers, washed cars with a bucket, the only thing was you couldn't water the lawn" – Resident

"I didn't find the restrictions restrictive at all. I was looking at what the next level was, and it seemed that everything would be manageable" – Resident

The SME participants also tended to discuss changes that they made at the household level, as not all of their businesses were water reliant. However, some were more directly impacted, and talked about some of the measures that they put in place for their business in order to use less water. A couple of participants also indicated that there was a sense of worry building in their industry.

"My business doesn't use a lot of water. I just thought of ways of using fewer towels, so there was less washing etc." – SME owner/manager

"For most construction clients, water is an essential ingredient. To make concrete etc. you need water. And so, the idea of having limited water is worrying." – SME owner/manager

Perceptions of water restrictions

Participants were also asked if they felt that restrictions should be used, and whether or not the restrictions put in place by Council were fair.

Almost all felt that restrictions are an essential way of slowing water use during times of drought, and that they were happy to comply with the restrictions when required. However, a couple of the SME participants were of the view that restrictions shouldn't be used as a way for Council to 'shirk' their responsibility in providing the supply in the first place. Overall, however, it was widely agreed that Council should plan to never run out of water and if that mean placing restrictions on water use, then that was fair enough.

"We live in a first world country. Council should be making sure we have the supply ready to use. I understand that there are droughts and restrictions are important for those times, but outside of that we should be able to use what we want. We pay for it. So, if levels are above 50% or 60% there shouldn't be any restrictions in place." – SME owner/manager

"Yes, they should absolutely plan to never run out of water." – SME owner/manager

"They should plan so we don't run out of water. It is about involving the whole community and knowing the tricks to save water, hopefully it won't come to this." – Resident

Some participants also suggested that more could be done to educate the general public in order to get them to value water more than they currently do. They suggested that this may result in lower water use generally – thereby delaying the need to implement any form of formal restrictions.

"If people are educated people will use water more efficiently." – Resident

A couple of the participants also suggested that there were difficulties presented by the fact that different regions had different restrictions.

"It was confusing sometimes when Sydney rules were different to the Central Coast rule – when they come up on holidays it was really confusing for people." – Resident

Exemptions

There was recognition that some exemptions may be required when restrictions are in place. In terms of exemptions, there was consistent reference to both hospitals and nursing homes, while some also suggested that food related industries may also require an exemption.

Some also thought that green spaces should ideally be preserved during times of drought, though there was also consistent mention of bore water or recycled water use for these. Even so, a few of the participants recognised that there may be a point at which even that can't be maintained.

"It is really important to keep parks green. We've seen how important these spaces are during this pandemic. People need to get out in the fresh air." – Resident

"I like the idea of parks still being useable, but if we're deciding between a green sports field and our ability to have clean drinking water, we have to choose drinking water." – Resident

A couple of the SME participants also suggested that there were 'critical' industries that should be kept going even if they required water.

"During COVID there are industries that are classified as critical – industries that are required for us to keep functioning, so maybe they need exemptions." – SME owner/manager

4.1.1.11 Acceptance level of various water restriction types

Following on from this session Council presented to participants the current water restrictions policy. The presentation highlighted the strengths and challenges of imposing water restrictions as well as a number of examples. Forum participants were then put into their breakout rooms to discuss their reactions to the Council's policy and level of acceptability of a range of restriction types and behaviour expectations. For each restriction type or expected behaviour they could choose from acceptable at all times, acceptable during early drought, mid drought, late drought or never acceptable.

Following this breakout session, in the interest of time, a series of five restriction types were polled to gain an individual assessment of acceptability of each of the restriction types. For the restriction types where this occurred the results of the polling questions are presented in the form of graphs in the following section.

Summary of acceptability of various restrictions and behaviour expectations

Below is a summary table presenting each of the restriction types and behaviour expectations and the most common response from the participants across the forums and in-depth interviews:

Table 12: Summary table of acceptability of each restriction type

RESTRICTIONS/REGULATIONS	TIME ACCEPTABLE (Most common response)
No outdoor watering between 10am and 4pm (with hose or sprinkler)	At all times
Outdoor watering only allowed for 1 hour a day on 2 days of the week	Mid to late drought
All hand-held hoses must have a trigger nozzle	At all times

Cars and boats can only be washed using a bucket	Mid drought (but varied answers)
Sprinklers are banned	Early to mid-drought
Domestic outdoor water use banned (no hosing, sprinklers, drip irrigation, watering cans at any time)	Late drought
Council outdoor water use with drinking water banned (no watering of playing fields or gardens)	Mid drought (but very varied – ideally should use rainwater or recycled at all times)
No hosing of driveways and pathways	At all times to early drought (ideally only hose hard surfaces for safety reasons)
Pools and spas cannot be topped up with drinking water	Early to mid-drought (should use rainwater)
Collection of water at centralised collection points	Late drought (but plan ahead to avoid this occurring)
EXPECTED BEHAVIOURS	TIME ACCEPTABLE
Shower for less than 4 minutes each day	At all times to early drought (but very varied answers)
Shower for less than 1 minute each day	Late drought to never
Collect water from shower and washing machine to use on garden and lawn	Early to mid-drought (but varied answers)
Do not rinse plates and utensils before placing in the dishwasher – scrape instead	At all times (but varied answers)
Only flush toilets after every second use	Mid to late (but varied answers)
Only flush toilets with water collected after use elsewhere (e.g., shower, bath, washing machine, sink, cooking)	Late drought to never
Decrease your frequency of washing machine use (i.e., clothes washing)	At all times to mid drought (but varied answers)

Acceptability of no outdoor watering between 10am and 4pm (with hose or sprinkler)

Overall, the majority felt that no outdoor watering between 10am and 4pm was acceptable at all times.

Most forum groups felt that it was reasonable to ban outdoor watering (with a hose or sprinkler) between 10am and 4pm at all times, with several participants noting that watering plants is not efficient throughout the day because too much water is lost through evaporation. Although some felt this restriction was more appropriate during the early stages of drought because some individuals such as elderly residents, would be more active during the day.

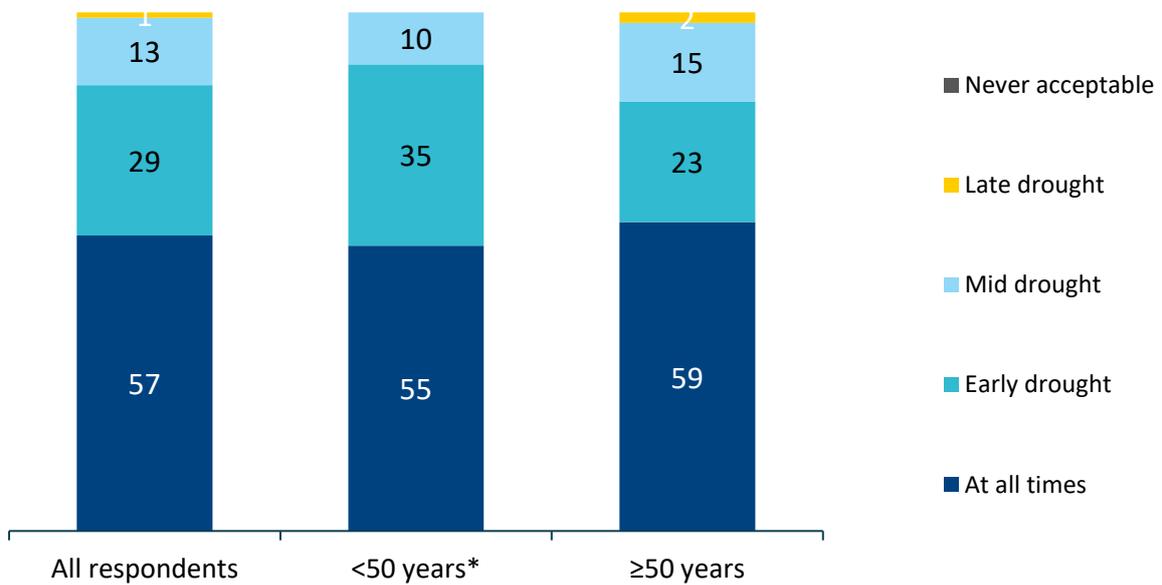
"It's just going to evaporate anyway." – Resident

"Why would you water during the day when it is the hottest? Plants don't want to be watered between those times anyway." – Resident

"You should have to think of a reason to do it, not a reason not to do it." – Resident

This restriction type was also polled in the forum and amongst in-depth interview respondents and over half (58%) felt that outdoor watering between 10am and 4pm should be banned at all times. A further three in ten (29%) felt it should be introduced at the 'early drought' stage. Views on this restriction were consistent across age groups.

Figure 4: Percentage of acceptability of restriction – No outdoor watering between 10am and 4pm (with hose or sprinkler)



For each of the following restrictions please indicate the level of acceptability.

Base: All forum 1 and in-depth participants who answered this question (n=68); <50 years (n=21*); ≥50 years (n=47)

*WARNING: Small base size

Acceptability of outdoor watering only allowed for 1 hour a day on 2 days of the week

Most felt that this restriction should be introduced at the mid to late drought stage.

Many agreed that restricting outdoor watering to 1 hour a day on 2 days of the week was appropriate mid drought, reasoning that most gardens would not need more water. However, there was some concern that those growing their own fruit and vegetables would need to use water more often, and as such they indicated that this restriction should only be introduced late into a drought.

Interestingly on this restriction and some of the others related to outdoor watering, it was suggested that a distinction should be made between watering grass and watering flowers or fruit and vegetables. Lawns were felt to be less important to keep green and much easier to recover from a drought, while the impact of garden plants and fruit and vegetables dying was greater and they were much more expensive to replace.

"Yes, we shouldn't be watering grass. Some plants like European plants take too much water we should be sensible about this and not use plants that take too much water." – Resident

"Are we talking about grass or veggies and fruit? ... they should make a distinction between grass and vegetables/fruit." – Resident

Some participants also raised questions about how this restriction would be monitored, and it was agreed that it would be difficult for Council to regulate this restriction type as they would not know what days of the week people had watered or not.

"How is this implemented or mandated? In principle it is fine but hard to prove what day you've watered previously." – Resident

Acceptability of all hand-held hoses must have a trigger nozzle

Almost all participants felt that hand-held hoses should always have a trigger nozzle.

This restriction was seen to be effective in minimising water wastage and would incur minimal cost to households. It was also felt to be common to have a trigger nozzle and more convenient to use one, therefore a very acceptable and logical restriction type.

"Trigger nozzle all times because you can waste a lot of water otherwise." – Resident

However, there were one or two who felt that this restriction should be introduced during early or even mid drought conditions.

Acceptability of cars and boats can only be washed using a bucket

The most common response for this restriction was mid-drought.

Overall participants had mixed views about only allowing cars and boats to be washed using a bucket. While some felt that cleaning vehicles with hoses was not necessary, those more regular car washers and boat owners agreed that it was a difficult to do the task with a bucket, and that when

this had been introduced in the past, they had simply not washed their car as frequently, which was not considered an ideal scenario.

"It's hard. My car stays dirty rather than wash it with a bucket." – SME forum participant

Acceptability of banning all sprinklers

On average most felt that his restriction should be introduced during the early or mid-drought stage.

While many felt that sprinklers should be banned during the early stages of a drought, others felt this restriction was more appropriate mid drought. It was generally agreed that sprinklers were convenient and saved a great deal of time spent watering, but that they were not essential, so some sort of restriction was accepted. However, it was felt that there needed to be a distinction made between timed and not-timed sprinklers, as there is greater risk of wastage or over-watering with untimed sprinklers as people simply forget that they have left the sprinkler on. In this respect those who suggested late drought were mainly referring to timed sprinklers which were seen to cause minimal water wastage.

"I don't like the way timed sprinklers get put into the same category as one that doesn't have a timer – the ones that people forget about it." – SME

As mentioned, there was also discussion regarding the necessity of watering lawns during drought which sprinklers being seen as mainly used for lawn watering. A couple of participants also commented about sprinklers being used on buildings to prevent bushfires and felt that they needed to be excluded.

"We've got two houses and a shed with sprinklers on the roof for bushfires... Remember that during a drought is when there's the most bushfire risk." – Resident

Acceptability of banning all domestic outdoor water use (no hosing, sprinklers, drip irrigation, watering cans at any time)

Late drought was the most common response for this restriction.

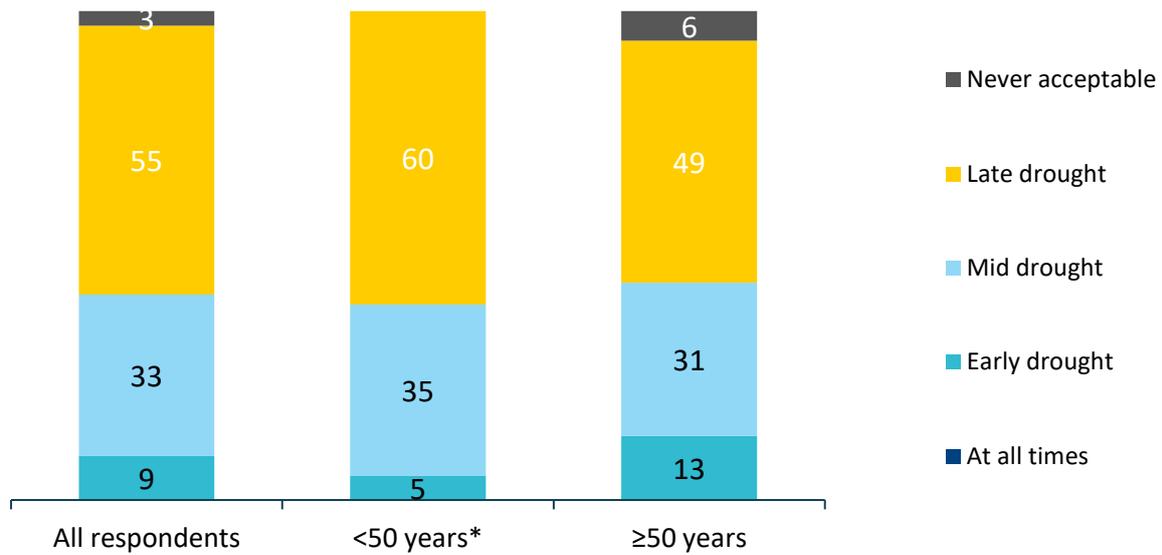
Overall, this restriction type was felt to be very serious and unappealing so the majority indicated that domestic outdoor water use should only be banned during late drought conditions. Clearly residents with established gardens and vegetable patches did not want their plants to die, and some mentioned aspects such as the fire risk of dead and dry plants.

"If you are trying to grow your own food then how are you going to do it?" – Resident

"Never acceptable... You need to keep plants alive, dead ones become a fire risk." – Resident

Participants answered a polling question about this restriction and nearly six in ten felt that domestic outdoor water use should be banned at late drought stage (55%) or never (3%). A third indicated that this restriction should be introduced mid drought. This was consistent across the age groups.

Figure 5: Percentage of acceptability of restriction – Domestic outdoor water use banned (no hosing, sprinklers, drip irrigation or watering cans at any time)



For each of the following restrictions please indicate the level of acceptability.

Base: All forum 1 and in-depth participants who answered this question (n=68); <50 years (n=21*); ≥50 years (n=47)

*WARNING: Small base size

Acceptability of banning Council outdoor water use with drinking water (no watering of playing fields or gardens)

The majority thought mid drought would be the most appropriate time to introduce this restriction.

The most common view was that Council outdoor water use (with potable water) should be banned during late drought, although there were some who felt it should be earlier. There were discussions and questions regarding whether or not Council used recycled water for this purpose with many suggesting that only recycled water should be used to water playing fields and public spaces.

"I'm sure they could use recycled water for that job. As far as I know I think they rarely use this water for that." – Resident

"Generally, council use their water for ANZAC Memorial... I'd lean towards mid drought because they are important sacred areas, so we need to keep them good." – Resident

Acceptability of no hosing of driveways and pathways

On average banning hosing of driveways and pathways was felt to be appropriate at all times or early drought.

Acceptance of banning hosing of driveways and pathways was quite mixed amongst participants. While many felt that hosing driveways and pathways was unnecessary and should be banned at all

times, others suggested early drought would be better because of the safety risk such as slipping or falling.

"Sometimes you have to use it to get rid of algae, if it's slippery... If for safety purposes then should be allowed." – Resident

"I have no idea why people want to hose a driveway or pathway; it is beyond me." – SME owner/manager

Acceptability of no topping up of pools and spas (with drinking water)

Early or mid-drought was the most common response for introducing the restriction of no topping up of pools and spas.

On average this measure was acceptable to be introduced at the early or mid-drought stage. Those in favour of early drought stated that pools were a luxury and that pool owners should also install a tank to top up their pool with rainwater because if they can afford a pool, they can afford a tank.

Others (predominantly pool owners) felt that late drought was fair as pool equipment is expensive to repair if water levels drop below a certain point.

"If they can afford the pool, they can afford the water, it's a luxury not a necessity." – Resident

"It should never be forced but the Council should encourage alternatives." – Resident

"Pools should be from a tank, but you need have an alternative water source. You should be able to afford to put in a tank/it's a luxury to do this." – Resident

"I feel bad as a new owner of a pool that has filled it up with drinking water. But on the other hand, what do you do if dams are at 95% - if you want to hose a driveway or use a lot of water then you should be able to when dams at that level!" – Resident

"I don't see how people can fill up pools if they can't use town water and don't have a tank." – Resident

Acceptability of collection of water at centralised collection points

The majority indicated that late drought was an appropriate time to introduce collection of water at a centralised point.

Overall, this restriction was very unappealing and considered an extreme restriction that Council would only need to introduce if the water situation was dire. While many participants within the breakout sessions and interviews commented that this was unappealing and unacceptable, the polling results showed that the majority (90%) indicated that late drought would be an acceptable time to introduce this restriction (and 6% never acceptable).

From the discussions, it was generally felt that if Council needed to introduce this restriction then clearly the water levels would be extremely low and the community would all have to accept whatever was required, so in this respect they selected 'late drought' rather than 'never acceptable'.

While some were aware that this had been a reality in South Africa and some New South Wales regional towns in the last drought, there were comments that the Central Coast has a secure enough water system to negate the need to collect water at a centralised point and they could not imagine a situation when this would be needed. It was also felt to be an unacceptable scenario for the more vulnerable members of the community such as the elderly.

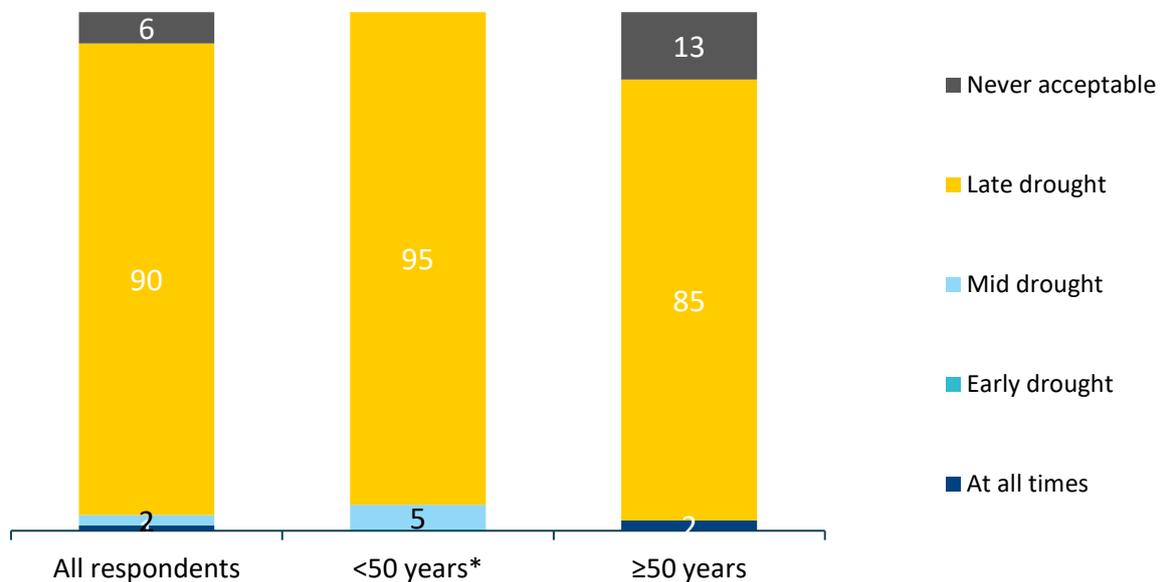
"If that's how grim it gets, we'd have to – if we have no option that's what we'd have to do." – Resident

"I never want to have to do that." – SME owner/manager

"Some people, like the elderly, will not be able to ever do that." – Resident

"There is enough water available if it's funnelled into the right places. A lot of water goes to waste and [there is] a lot of things the government can do before this." – Resident

Figure 6: Percentage of acceptability of restriction – Collecting water at a centralised location



For each of the following restrictions please indicate the level of acceptability.

Base: All forum 1 and in-depth participants who answered this question (n=68); <50 years (n=21*); ≥50 years (n=47)

*WARNING: Small base size

Acceptability of showering for less than 4 minutes each day

At all times or early drought were the most common responses for this behaviour expectation.

Reactions to this expected behaviour were quite mixed. While many participants felt that showering for less than 4 minutes a day was a sufficient amount of time at any time regardless of whether or not it was a drought, others felt that this time limit was more appropriate during early or even mid drought.

Correspondingly, when asked individually via forum polling, just under half (45%) stated that Central Coast residents should always be expected to have showers for less than four minutes a

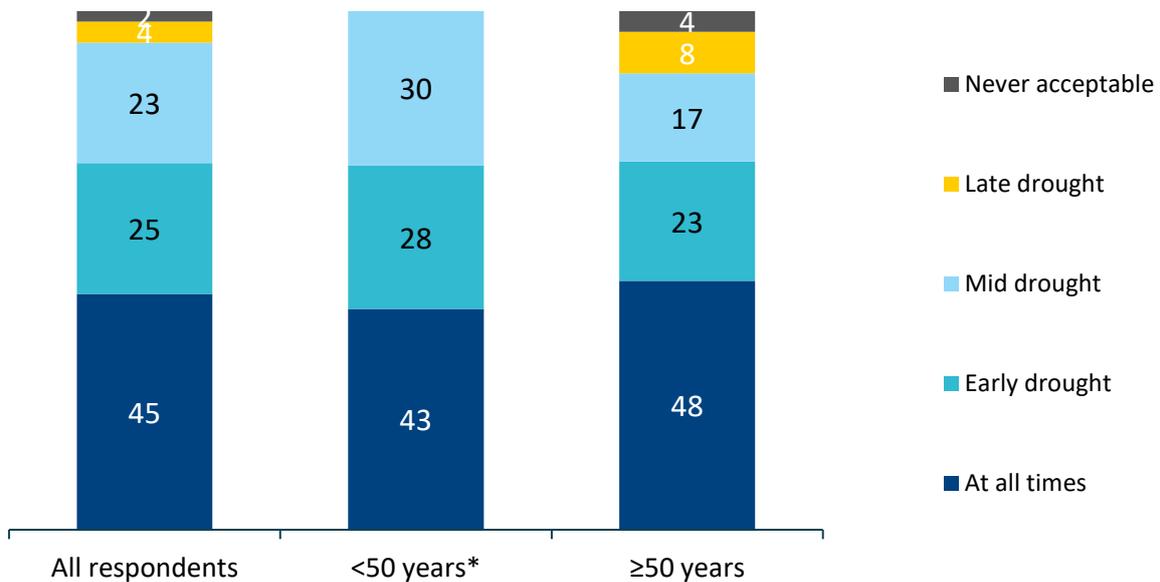
day, with 25% feeling it should be expected early and 23% mid drought. Again, acceptance of this expectation was fairly consistent across the age groups.

"We were at a campsite where we had to use a 2-minute shower and we were shocked how long it lasted." – Resident

"Does that include teenagers? and people with long hair? It would be very hard to wash your hair in that time." – Resident

"It should be about per household a 2-minute shower for some, 4 minutes for others." – Resident

Figure 7: Percentage of acceptability of expectation – Shower for less than 4 minutes each day



For each of the following expectations please indicate the level of acceptability.

Base: All forum 1 and in-depth participants who answered this question (n=68); <50 years (n=21*); ≥50 years (n=47)

*WARNING: Small base size

Acceptability of showering for less than 1 minute each day

Showering for less than 1 minute each day was generally felt to be never acceptable – or only expected in late drought conditions.

Most participants felt that expecting people to limit showers to less than 1 minute would be very unappealing and therefore never acceptable, or only appropriate in a late drought period. It was thought that one minute was not a sufficient amount of time to shower and clean themselves properly and it would potentially risk personal hygiene and public health.

"Never – you have situations where people can't have a minute shower." – Resident

"I'd like to see you try... depends on how much hair you have." – Resident

Acceptability of collecting water from the shower and washing machine to use on garden and lawn

Early to mid-drought was the most common expectation for the collection of water from the shower and washing machine to use the on the garden or lawn.

While reactions to this idea of collecting water in the shower were generally positive, with many stating that they had done so during the last drought, there were mixed reactions to the idea on the basis of how easy or difficult it was for certain people (such as the elderly), the risk of falling and accessibility between the shower and the garden.

Similarly, with grey water collection while many already had existing grey water systems other did not have this and did not know how to install them or felt that Council should help them install grey water systems.

"Mid drought, we're not a third world country." – Resident

"I'd prefer for the council to help us get greywater systems." – Resident

"It (shower water collection) should not be expected but people can do it if they want to. My mother was doing it at 90 and I told her not to because she could hurt herself." – Resident

Acceptability of not rinsing plates and utensils before placing in the dishwasher – scraping instead

Overall, most felt that not rinsing dishes before plating them in a dishwasher should be done at all times.

Most agreed that it was reasonable to expect that people should not rinse plates and utensils before putting them in the dishwasher at all times because it was unnecessary and a waste of water. Having said that there were some who also suggested early or mid-drought, based on the smell it would create in the dishwasher and if food was really thick or sticky.

"I don't agree - the dishwasher would stink." – Resident

"All times - you don't need to rinse it." – Resident

Acceptability of only flushing toilets after every second use

Mid to late drought was the most common expectation regarding flushing the toilet after every second use.

Participants tended to decide that expecting people to only flush toilets after every second use was acceptable in mid or late drought. However, amongst SME owners/managers, this was not felt to be acceptable at all in the office or business environment. While there were some concerns over hygiene as well as individuals' personal levels of cleanliness, many felt that this behaviour could be acceptable if it was needed.

"... getting into health issues when you leave something in the toilet for hours in summer!" – Resident

“When working with others it’s not acceptable, everyone has got different cleanliness needs. It would be very different if for residential.” – SME owner/manager

“I think people should do it as matter of course, but each household is different.” – Resident

Acceptability of only flushing toilets with water collected after use elsewhere (e.g., shower, bath, washing machine, sink, cooking)

This behaviour was generally felt to be unacceptable or only acceptable in late drought conditions.

Only flushing the toilet with water collected elsewhere was felt to be very inconvenient and therefore largely unacceptable unless water is very scarce (like late drought conditions). The process of collecting shower or washing water and putting it into the cistern yourself every time the toilet is flushed was felt to be onerous and installing a grey water system for toilet use was considered expensive and unrealistic.

“With new builds you could do this but with existing houses...it’s not practical to collect manually.” – Resident

“In hospitality you can’t... If you’re putting it with a bucket no, but if you have a system with piping to run that than yes.” – SME forum participant

Acceptability of decreasing frequency of washing machine use (i.e., clothes washing)

Decreasing washing machine use was mainly considered an appropriate behaviour at all times through to mid drought.

Overall, there were a variety of opinions on decreasing washing machine use. Clearly this was felt to be very dependent upon the household type - for example whether they had children living in the house, the type of work that people did, and the number of people in the household. Many indicated that they already minimise their washing, and therefore it would be difficult to cut it back even more.

“You’re paying for it so you should think about saving money – only use it when you need to.” – Resident

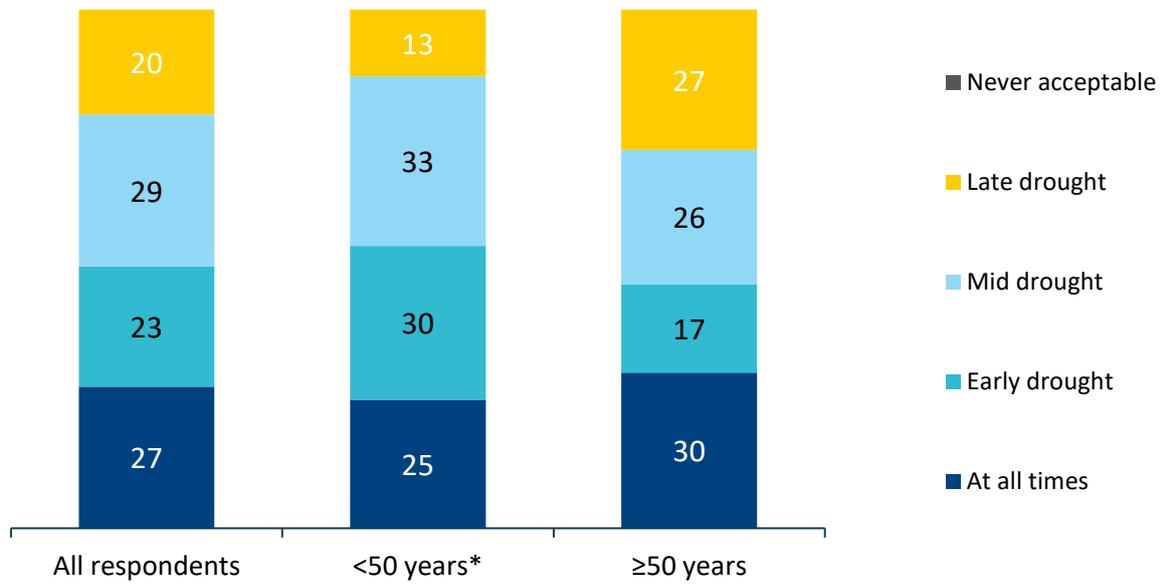
“It depends on the number of household members... difficult for families with a large number of children.” – Resident

“Who puts the washing machine on unless you have to wash?” – Resident

Participants answered a polling question on this idea and the results revealed that acceptance of decreasing washing machine use varied. Over one quarter (27%) felt that the Council should always expect individuals to decrease the frequency of washing machine use, however approximately half felt that it should only be expected in mid or late drought. Acceptability was similar across age groups.

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Figure 8: Percentage of acceptability of expectation – Decreasing frequency of washing machine use (for clothes)



For each of the following expectations please indicate the level of acceptability.

Base: All forum 1 and in-depth participants who answered this question (n=68); <50 years (n=21*); ≥50 years (n=47)

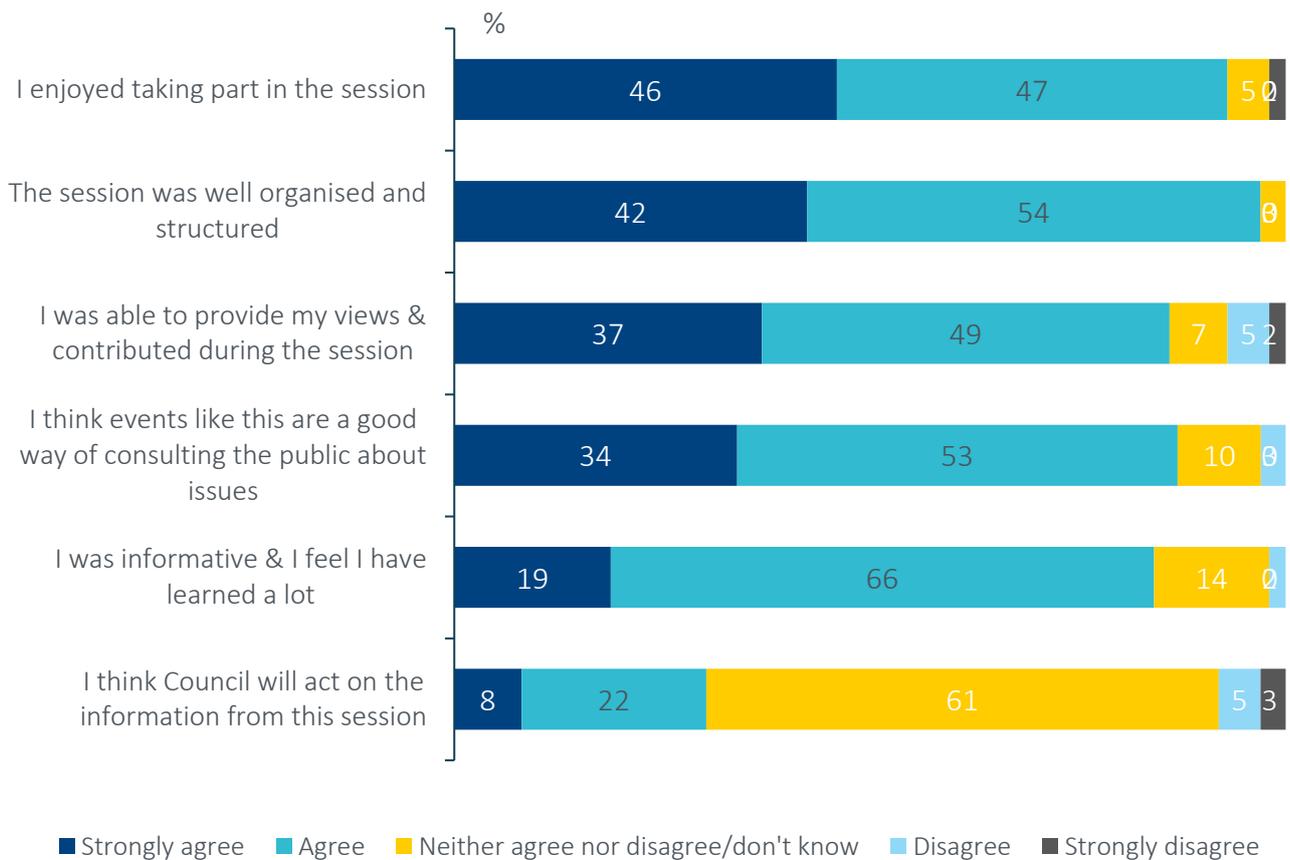
*WARNING: Small base size

Satisfaction with the engagement

Following the forums, participants were emailed a short questionnaire asking them to rate their level of agreement with a series of statements regarding satisfaction with the forums.

As shown below, most participants agreed (93% strongly + slightly agreed) that they had enjoyed the session and a similar proportion (96%) thought it was well organised and structured. There was also strong agreement that they were able to provide their views and contribute (86% agreement) and that events like this are a good way of consulting (87% agreement). There was lower agreement that they think Council will act on the information from the session (30%).

Figure 9: Percentage of satisfaction with the engagement



Please indicate your level of agreement with the following statements...

Base: All forum 1 participants who answered this question (n=59)

4.2 Method 2 – Deliberative forums and phone interviews, round 2

Initial perceptions of water supply and demand options

At the commencement of the forums, participants were welcomed by the Woolcott Research & Engagement Lead Facilitator, who also carried out the acknowledgement of country and explained the structure of the session and guidelines. A representative from Council was then introduced and they provided a brief presentation outlining the need for the CCWSP and an overview of the community engagement plan.

Following this, participants answered an initial set of polling questions regarding their current perceptions of a range of water supply and demand options.

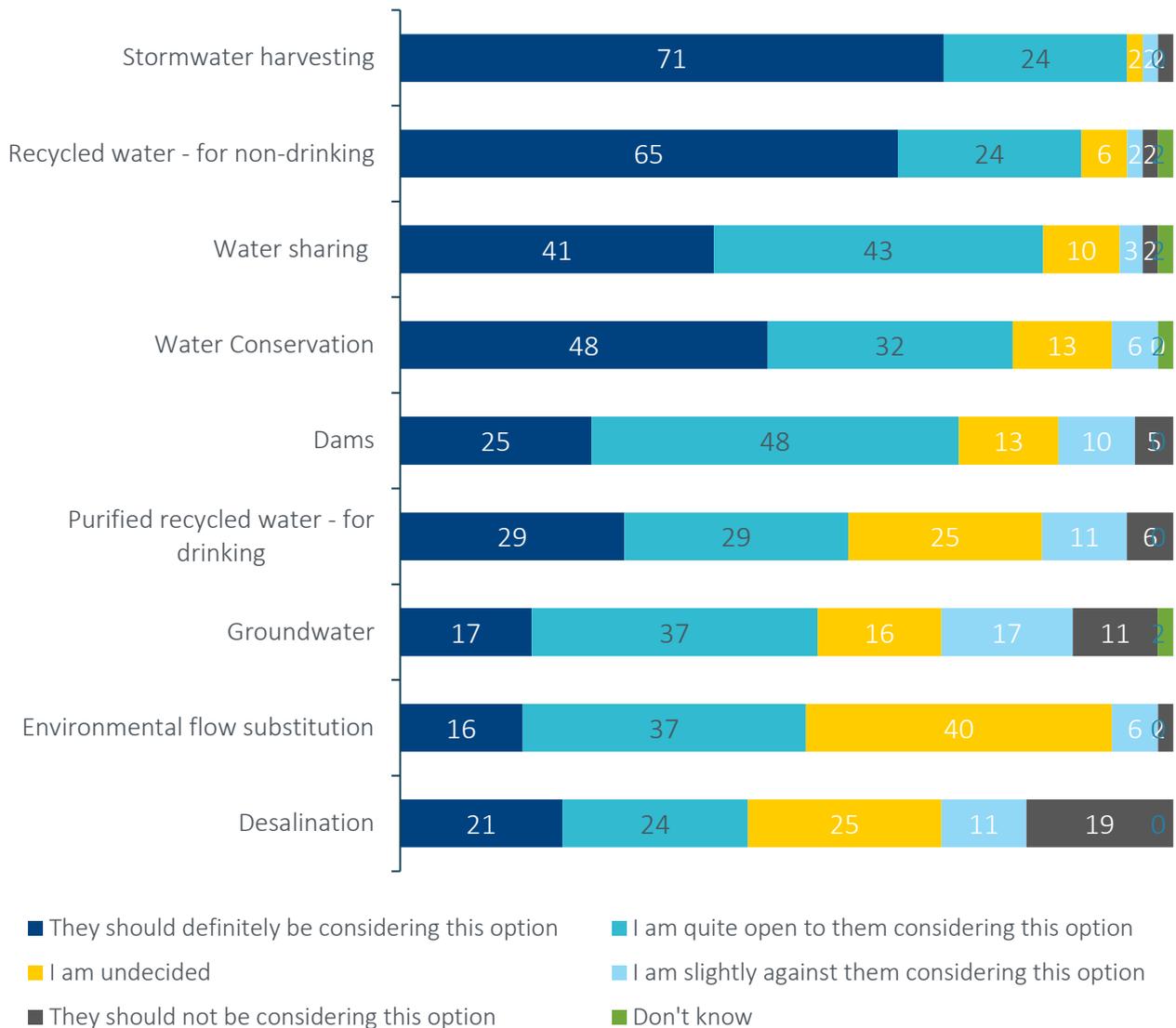
It was explained to participants that there are many options Council could consider ensuring there will be enough water for the region into the future. They were then asked to indicate how open they were to Council considering each option, regardless of how much they knew about them.

These questions were then asked again at the completion of the forums/in-depth interviews to reflect on any changes in attitudes following greater information and discussion about the options.

Summary of all options

The chart below summarises the initial set of polling results for all the water supply and demand options at the commencement of the forums and in-depth interviews, prior to any information being provided and discussion of each option. From the ensuing discussions it was found that the level of indecision and uncertainty expressed in relation to some options was mainly because participants had not heard of it or knew little about it at the commencement of the engagement process.

Figure 10: Percentage of initial openness to Council considering each of the water supply and demand options



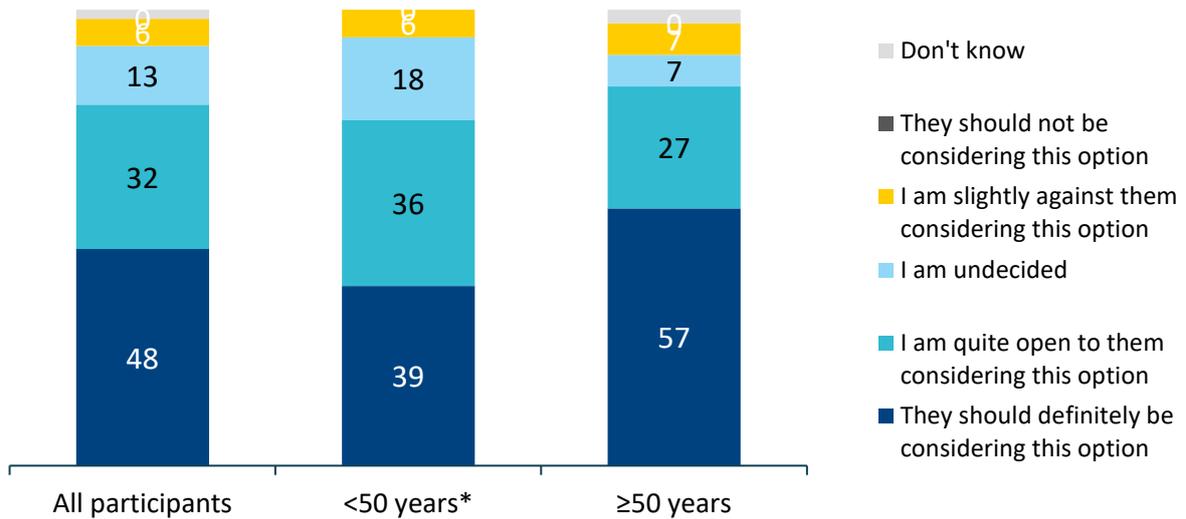
Q. There are many options Central Coast Council could consider to ensure there will be enough water for our region into the future, for each option, please indicate how open you are to Council considering this as an option (regardless of how much you know about each option).

Base: All Round 2 forum and in-depth participants answering the questions.

4.2.1.1 Water conservation (i.e. reducing everyone’s demand for drinking water e.g. water restrictions)

As shown on Figure 11 below, at the outset it appeared that the majority (80%) of participants were at least quite open to Council considering water conservation in the future, with almost half (48%) indicating they should definitely consider this option. Older participants (aged 50+ years) were particularly positive towards the idea (84% compared to 75% of those aged under 50 years).

Figure 11: Percentage of initial openness to Council considering water conservation



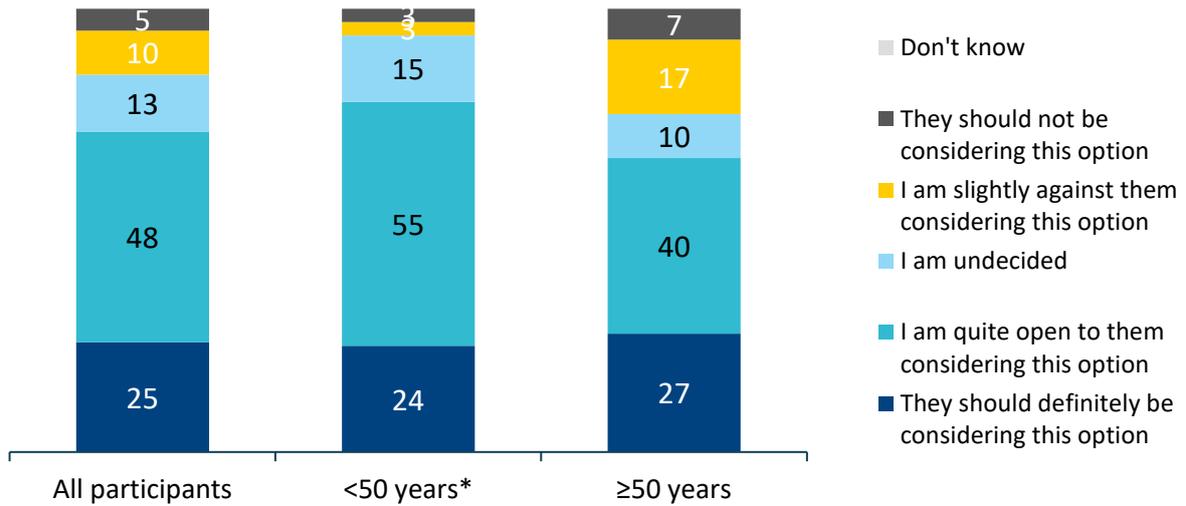
Q. There are many options Central Coast Council could consider to ensure there will be enough water for our region into the future, for each option, please indicate how open you are to Council considering this as an option (regardless of how much you know about each option).

Base: All Round 2 forum and in-depth participants answering the question (n=63); <50 years (n=33); ≥50 years (n=30)

4.2.1.2 Dams

Dams obtained a slightly lower level of support at the commencement of the forums with 73% supportive in total, with the majority of these (48%) at the ‘quite open to consideration’ level and fewer (25%) more definite in their support. Younger participants (aged under 50 years) appeared to be more positively disposed towards this option than the older participants.

Figure 12: Percentage of initial openness to Council considering dams



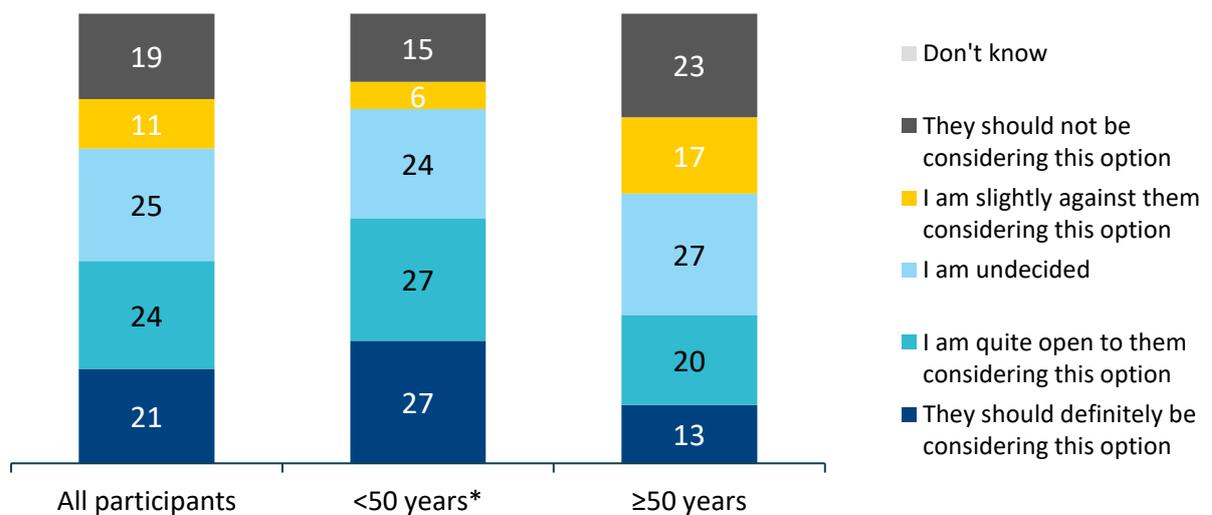
Q. There are many options Central Coast Council could consider to ensure there will be enough water for our region into the future, for each option, please indicate how open you are to Council considering this as an option (regardless of how much you know about each option).

Base: All Round 2 forum and in-depth participants answering the question (n=63); <50 years (n=33); ≥50 years (n=30)

4.2.1.3 Desalination

The figure below shows that the idea of desalination was met with very mixed reactions initially. While 45% were in support, a further 25% were undecided and 30% against Council considering this option. Positivity was greatest amongst participants aged under 50 years, compared to their older counterparts (54% versus 33% at least 'quite open' to Council considering desalination in the future).

Figure 13: Percentage of initial openness to Council considering desalination



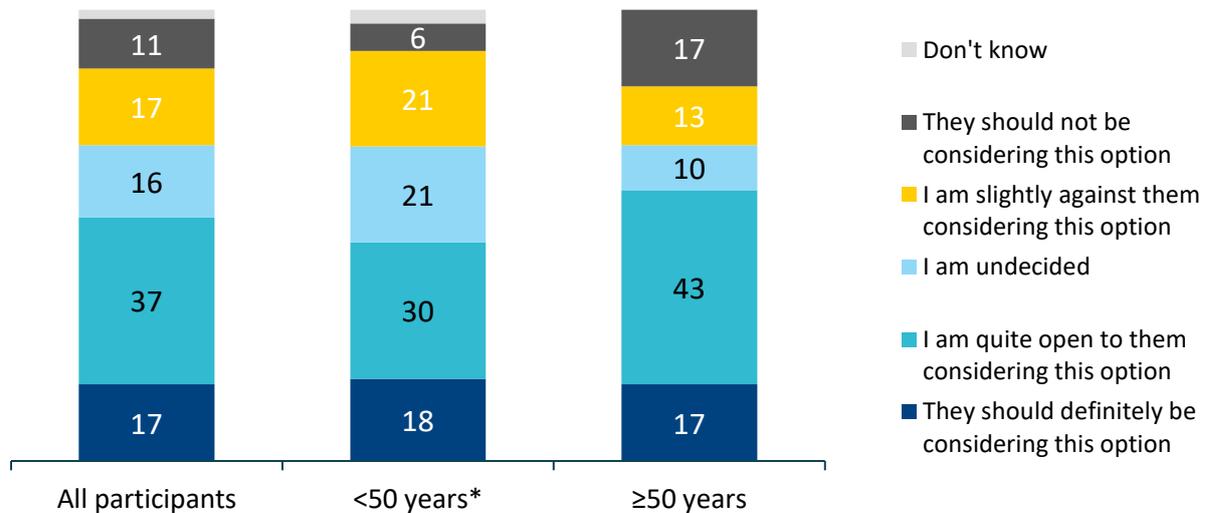
Q. There are many options Central Coast Council could consider to ensure there will be enough water for our region into the future, for each option, please indicate how open you are to Council considering this as an option (regardless of how much you know about each option).

Base: All Round 2 forum and in-depth participants answering the question (n=63); <50 years (n=33); ≥50 years (n=30)

4.2.1.4 Groundwater

Figure 14 shows that groundwater was another option that gained quite mixed reactions. While over half (54%) were supportive of the idea (mostly at the 'quite open' level rather than definite level), 28% were against the option and 16% undecided in their views. Older participants were more often 'quite open' to Council considering groundwater in the future than younger participants.

Figure 14: Percentage of initial openness to Council considering groundwater



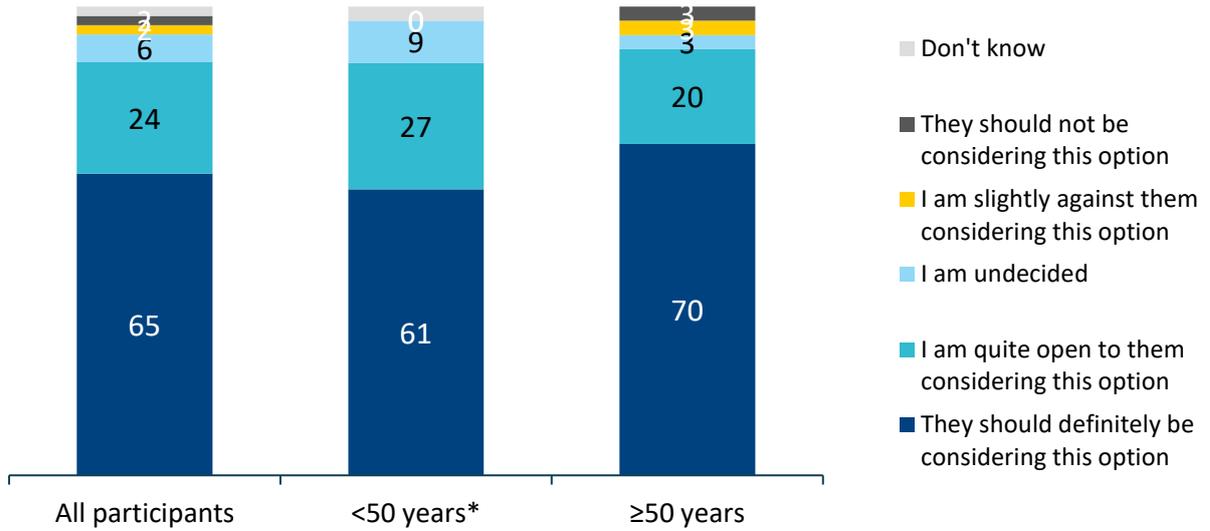
Q. There are many options Central Coast Council could consider to ensure there will be enough water for our region into the future, for each option, please indicate how open you are to Council considering this as an option (regardless of how much you know about each option).

Base: All Round 2 forum and in-depth participants answering the question (n=63); <50 years (n=33); ≥50 years (n=30)

4.2.1.5 Recycled water (for non-drinking)

Recycled water for non-drinking was well supported by participants initially. Around two thirds (65%) felt Council should definitely consider this option and a further 24% were 'quite' open to them considering it (a total of 85% support). This option gained the second highest support level overall. Older participants (aged 50 years and over) emerged as slightly more supportive than those aged under 50 years.

Figure 15: Percentage of initial openness to Council considering recycled water (for non-drinking)



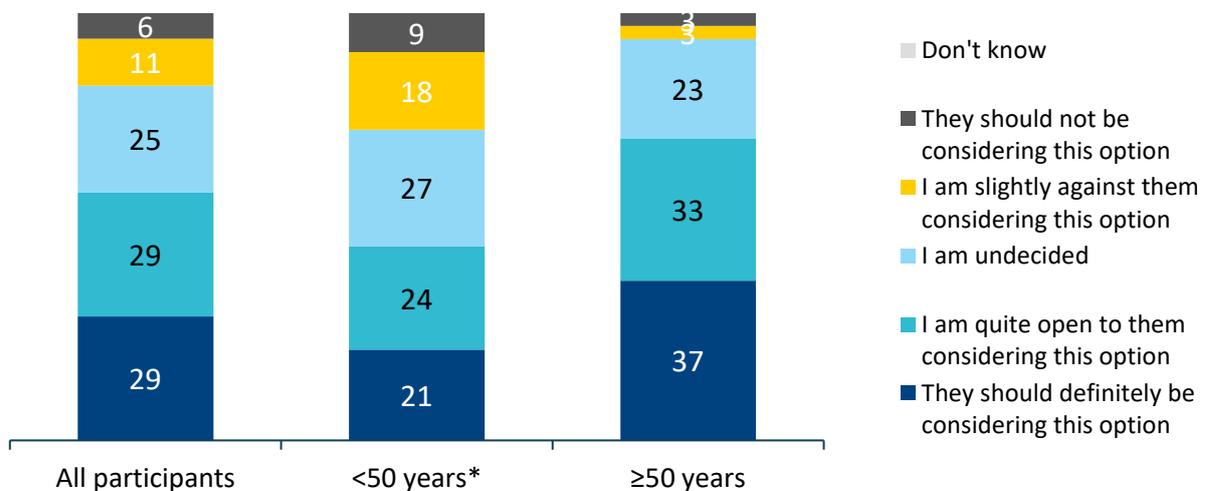
Q. There are many options Central Coast Council could consider to ensure there will be enough water for our region into the future, for each option, please indicate how open you are to Council considering this as an option (regardless of how much you know about each option).

Base: All Round 2 forum and in-depth participants answering the question (n=63); <50 years (n=33); ≥50 years (n=30)

4.2.1.6 Purified recycled water (for drinking)

At the outset, prior to the provision of any information and discussion, purified recycled water for drinking gained mid-level support with 56% at least quite open to this option being considered by Council. There was also some uncertainty and negativity surrounding this idea with 25% undecided and 17% against purified recycled water for drinking. Again, older participants were showed greater acceptance of the idea than their younger counterparts.

Figure 16: Percentage of initial openness to Council considering purified recycled water (for drinking)



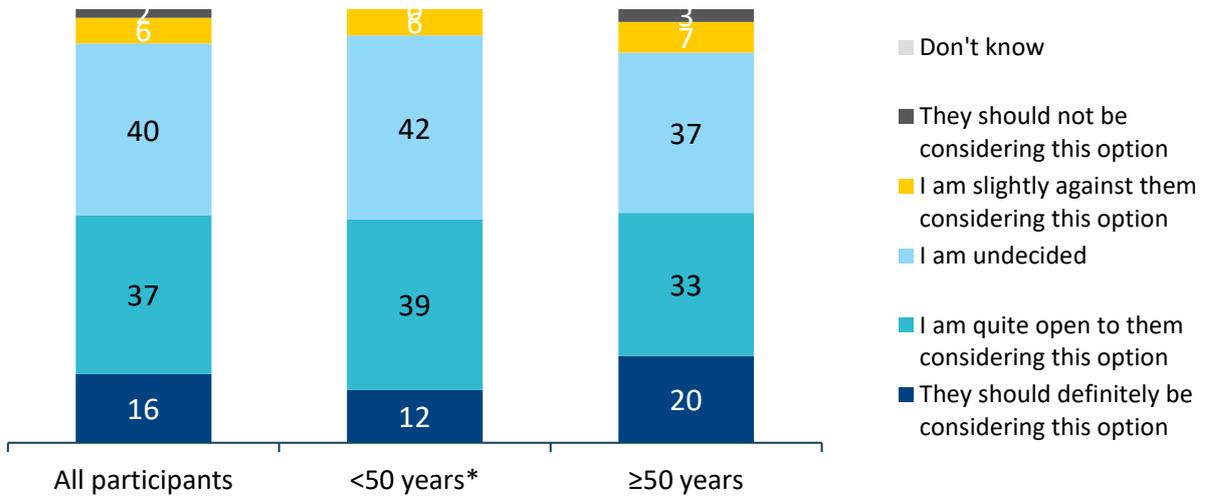
Q. There are many options Central Coast Council could consider to ensure there will be enough water for our region into the future, for each option, please indicate how open you are to Council considering this as an option (regardless of how much you know about each option).

Base: All Round 2 forum and in-depth participants answering the question (n=63); <50 years (n=33); ≥50 years (n=30)

4.2.1.7 Environmental flow substitution (putting recycled water back into river system)

Initial support for environmental flow substitution was relatively low with total support for the idea being 53% (as shown on the figure below). Four in ten were undecided about this option and a minority (8%) were against the idea. As mentioned previously, from the discussions that followed it was clear to see that the initial uncertainty was mainly because participants had not heard of it or knew little about it at the commencement of the engagement process.

Figure 17: Percentage of initial openness to Council considering environmental flow substitution



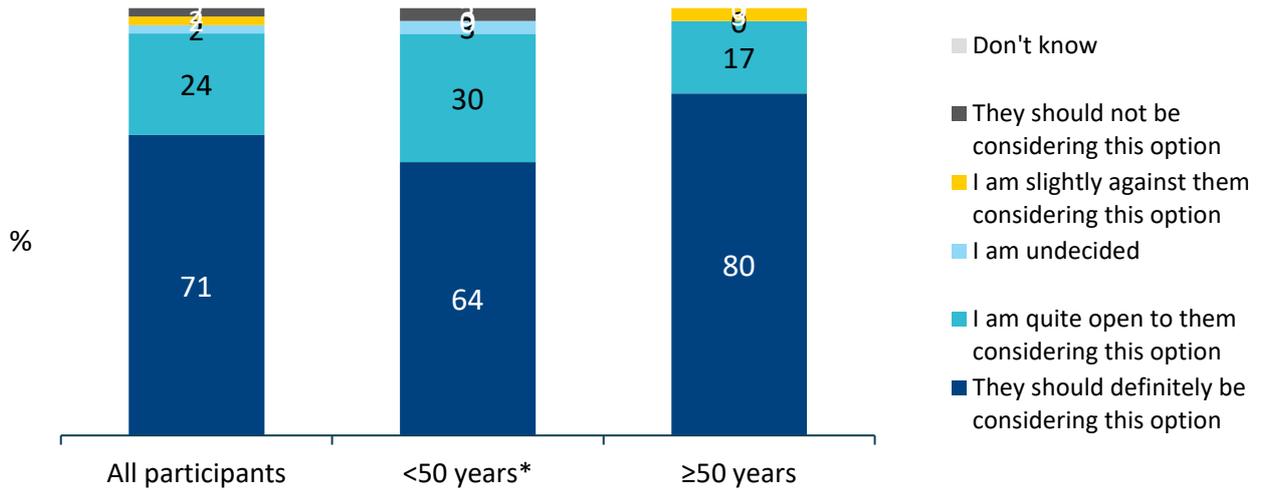
Q. There are many options Central Coast Council could consider to ensure there will be enough water for our region into the future, for each option, please indicate how open you are to Council considering this as an option (regardless of how much you know about each option).

Base: All Round 2 forum and in-depth participants answering the question (n=63); <50 years (n=33); ≥50 years (n=30)

4.2.1.8 Stormwater harvesting (re-use of stormwater and capture of rainwater in tanks)

Stormwater harvesting was also very well liked amongst participants initially, with 71% indicating Council should definitely consider this option, and a further 24% 'quite open' to this idea. In fact, this option gained the highest level of net support in the polling questions (95%). Support was particularly strong amongst participants aged 50 years and over.

Figure 18: Percentage of initial openness to Council considering stormwater harvesting



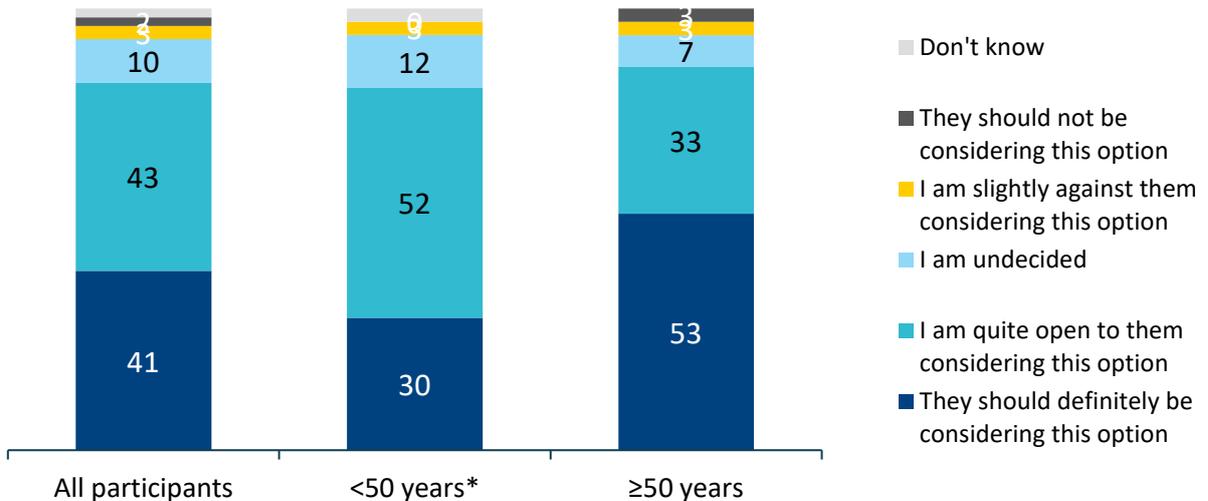
Q. There are many options Central Coast Council could consider to ensure there will be enough water for our region into the future, for each option, please indicate how open you are to Council considering this as an option (regardless of how much you know about each option).

Base: All Round 2 forum and in-depth participants answering the question (n=63); <50 years (n=33); ≥50 years (n=30)

4.2.1.9 Water sharing between regions (i.e. transferring water across regions to where it is needed most)

Water sharing between regions appeared to be well supported by participants at this initial stage. 84% indicated that they were at least 'quite open' to Council considering this in the future. This idea gained the third highest level of support of all the options, with it perhaps benefiting from some participants being aware of the existing water sharing arrangement between Central Coast Council and Hunter Water. Older participants (aged 50 years and over) again emerged as slightly more supportive than those aged under 50 years.

Figure 19: Percentage of initial openness to Council considering water sharing between regions



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Q. There are many options Central Coast Council could consider to ensure there will be enough water for our region into the future, for each option, please indicate how open you are to Council considering this as an option (regardless of how much you know about each option).

Base: All Round 2 forum and in-depth participants answering the question (n=63); <50 years (n=33); ≥50 years (n=30)

Importance of water values

In the next session, Council presented the challenges and opportunities associated with water supply and demand planning and outlined the results of the phase 1 forums where participants were asked what values were important to them or values that they felt Council should take into consideration when planning water for the future.

It was revealed to participants that the following values emerged:

- affordability – both; cost to build and cost to operate
- reliability
- environmental impact
- water quality
- empowering people
- education
- increasing efficiency/innovation
- social impact/equitable/community engagement.

It was explained that Council is committed to meeting the required standards of water quality and education across the options, and decision making more broadly and that they are always looking at increasing efficiencies, testing for leaks and finding innovation solutions. Therefore, water quality, education and increasing efficiency/innovation were aspect that did not vary between the options so were not included in the activities in this forum.

Prior to a polling question asking the perceived importance of each of the considerations a brief breakout session was carried out for participants to discuss their thoughts about the considerations and the importance of them.

In the breakout sessions, the majority indicated that that they agreed with the list of water values or considerations outlined.

There was strong agreement that the cost, particularly the ongoing cost, was a very important consideration. However while there were comments that affordability was important, especially in view of Council's current financial situation, many suggested that it was not the only aspect to consider, with suggestions that all options should be explored - with all the values in mind especially long-term reliability and environmental impact.

"Affordability is a factor, but it shouldn't be the driving factor. Whatever it costs to secure the future - it just makes sense to me." – SME owner/manager.

Reliability was again stressed as being important by many, indicating that whatever options Council were considering must be worthwhile both in terms of being able to provide a sufficient amount of water for the effort taken to build it, and ensuring it is reliable especially if it does not rain for an extended period of time.

"You have to look at cost in terms of the output. A single project may cost a lot of money but have little return in terms of reliability." – Resident

"Affordability matters, but I'd rather invest more in a car if I got a lot more, or I'd invest more in my education if I could get a long-term job, I'd be more inclined to pay more if it was going to last a long time." – Resident

Many were pleased to see that environmental impact was included in the list, with agreement emerging that it was important to ensure that whatever option is chosen is environmentally sustainable now and in the future. The social impact was also frequently commented upon as a worthwhile inclusion in the list that participants agreed with.

"Environment and reliability are really important.... I agree they are the two key ones; the rest are pretty broad." – Resident

"For me the environment should be at the top of the list - we have to think of the future otherwise there won't be any water basically." – Resident

"I'm glad they include things like social impact." – Resident

In general, most could not think of anything that was missing from the list. One or two participants mentioned aspects such as feasibility (i.e. what is feasible in the next 5 years), education, technological advancements and greater assistance from the commercial and industrial sectors.

"Education - last time we talked about teaching people about how much is being used in the shower and things like that." – SME owner/manager

"Is there something around putting it into DAs to ensure developers who are making profits could contribute to the rainwater system and storages. So, there is social equity and making it a bit fairer for everyone." – Resident

"People or businesses who use more water, take more water, should pay for a desal or whatever. There is Peats Ridge springs - owned by Coca Cola, why could they not pay for a desal plant or be a major contributor – should be like a tax system, user pays." – SME owner/manager.

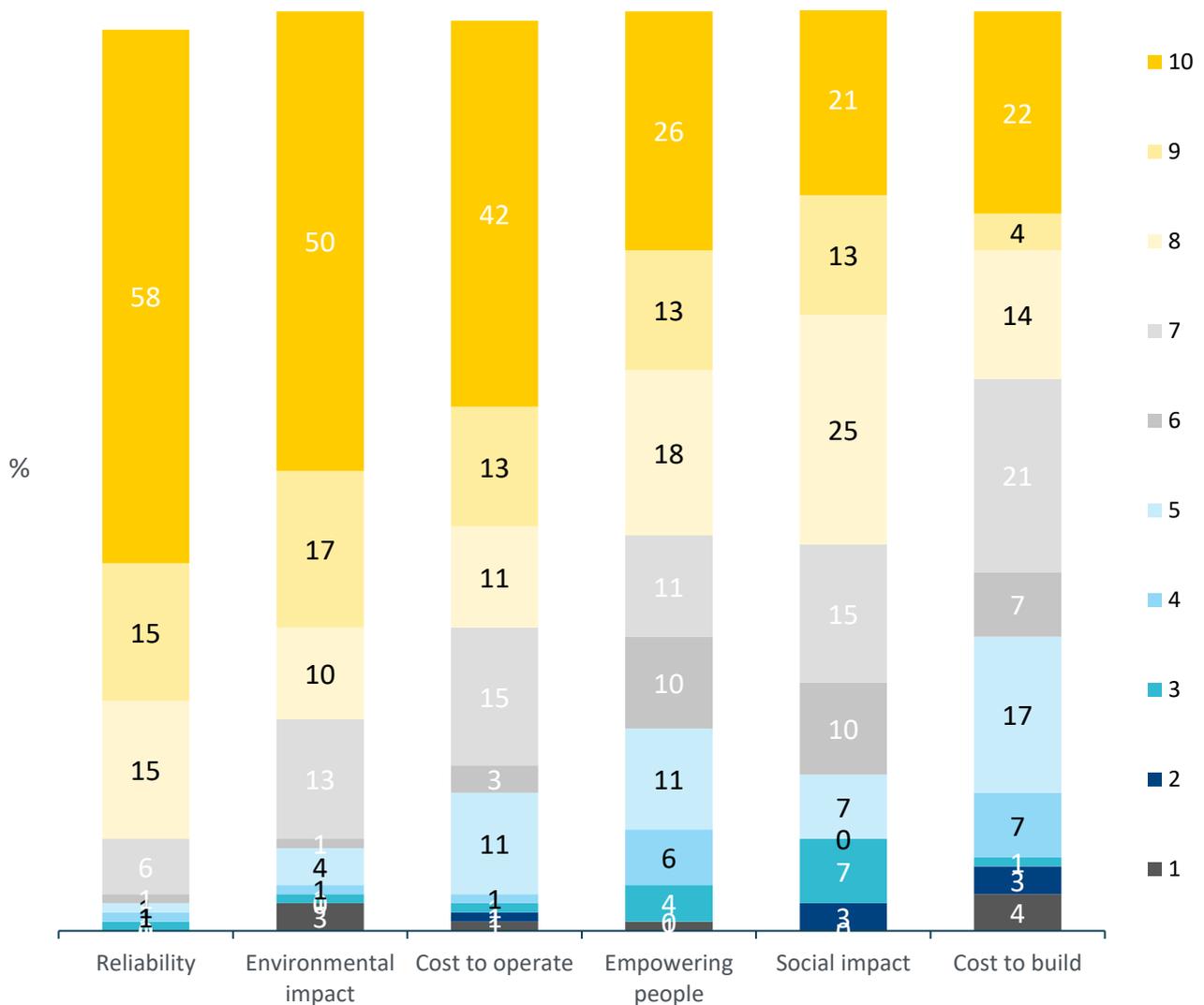
Importance of water considerations

At the completion of the discussion regarding the water considerations, participants answered a series of polling questions. For each of the six considerations they provided a score out of 10 in terms of perceived importance.

As shown in the figure below *reliability* gained the highest proportion of participants giving it a high importance score of 9 or 10 out of 10 (73%). This was followed closely by *environmental impact* (67% gave it a 9 or 10 out of 10), and *cost to operate* (55%).

The importance of *social impact* and *empowering people*, were rated quite similarly overall (about a third of the sample gave it a score of 9 or 10). Compared to the other considerations, *cost to build* obtained the lowest importance scores (26% gave a score of 9 or 10).

Figure 20: Percentage of importance of water considerations



Q. Please provide a score out of 10 for importance for the following considerations.
 Base: All Round 2 forum and in-depth participants answering the question (n=72)

Water demand and supply options

Representatives from Council initially presented the three demand-side options that Council is considering, followed by the six supply-side options. Participants also watched a short video outlining each option.

In the subsequent break-out sessions, each of the options were discussed exploring the positives, negatives and areas of uncertainty for each option.

4.2.1.10 Attitudes toward water conservation (i.e. reducing everyone's demand for drinking water e.g. water restrictions)

Overall, there was strong support for the conservation of water option. Activities such as leakage detection, water restrictions and education were thought to be essential. There was appreciation of it being a low cost option with low social and environmental impact.

"I like this, I know it doesn't yield the highest amount of water but its low cost.... I think it goes without saying that this should just happen, it's obvious they should be fixing leaks." – Resident

"We should do it. As a matter of course. Everyone should do it - businesses and residents." – SME owner/manager

It was agreed that encouraging everybody to reduce the amount of water used and cut down on treated water wastage was something that should be occurring all the time. Many went on to suggest that some water restrictions should be in place all the time.

"The important thing about this one is its saving water that has already been treated. If you waste that water, you're wasting the money and effort that has already been put into purifying that water." – Resident.

"What surprises me is I don't know why we don't have them all the time - as soon as it rains everyone is out wasting water..... water conservation should be 24/7 regardless of the dam level." –Resident

There were comments that Central Coast residents are used to living with water shortages and drought conditions so are probably quite efficient in their water usage. However, it was also frequently agreed that while it is good to conserve water, not everybody does it and that water conservation practices should always be present, but in conjunction with other water options. This option's low yield and low reliability appeared to be key factors influencing these perceptions that it should accompany other strategies rather than be the only option.

"I think it can work on the Coast. We've been through such tough droughts and water restrictions in the past, so a lot of people are already fairly mindful of their water use." – Resident

"If people actually start doing it, it would make a difference, but it should run along all the other options." – Resident

"It is good -but alongside other things because of the reliability. It's been around for a long time. It should always be in the mix because if it brings some results it's always worthwhile." – Resident

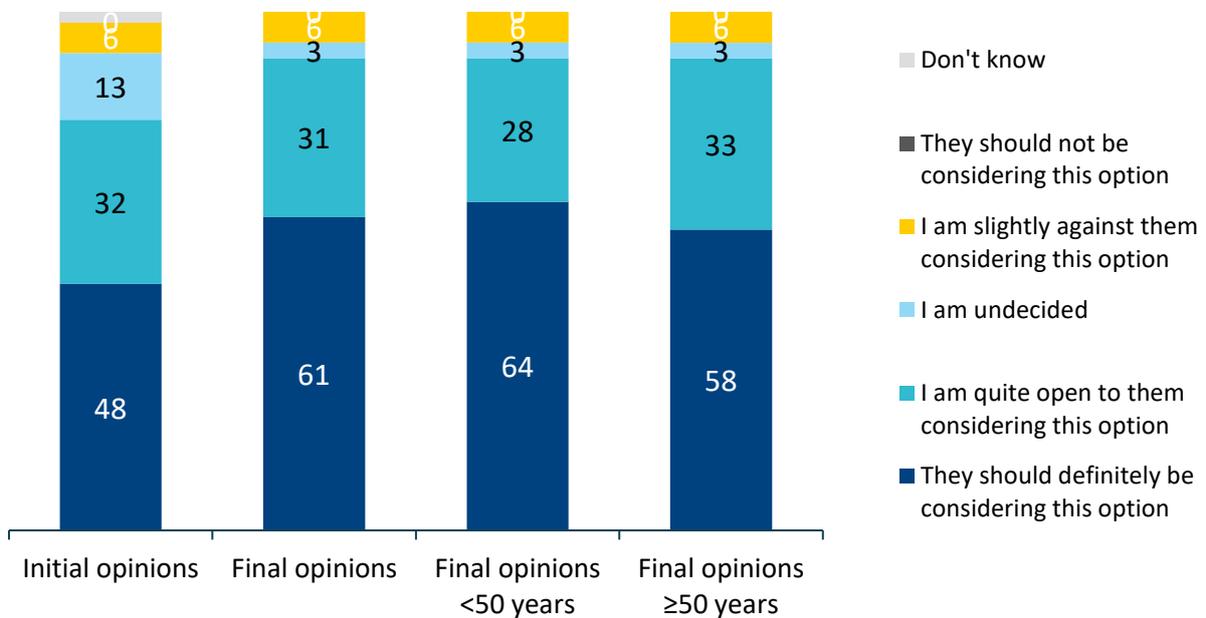
A couple of participants felt that digital metering was a good idea and would like to have access to the data to help them reduce water usage in their home.

"I particularly like the electronic meter idea. It would be good if people had access to their own data so they could see what they were consuming when they did different things around the home." –Resident

At the end of the forum, participants were asked to indicate how open they were to considering each of the options and water conservation was met with strong support with 92% indicating that Council should definitely consider it, or that they were quite open to Council considering this option (61% 'definitely', and 31% 'quite open').

The level of support for water conservation increased from 80% at the commencement of the forums to 92% following more information about it and discussion amongst peers. There were no significant differences by age for support for this option.

Figure 21: Percentage of openness to Council considering water conservation



Q. Now you've had a chance to learn more information about the water supply options and hear other people's views, we'd like to ask you again how open you are to Council considering each one. For each option, please indicate how open you are to Council considering this as an option.

Base: All Round 2 forum and in-depth participants answering the question (n=72); <50 years (n=36); ≥50 years (n=36)

4.2.1.11 Attitudes toward stormwater harvesting (re-use of stormwater and capture of rainwater in tanks)

The idea of harvesting stormwater was also met with largely positive reactions.

The key positive aspects of this option that participants reacted favourably towards were its low environmental and social impact and the idea of capturing the clean rainwater that they frequently

experienced seeing going down the drains being 'wasted'. Some also liked that fact that the water is used to keep local public areas and parks green.

"Yes, great idea, with our environment being such a worry, it is good to catch water that is absolutely wasted, which is what stormwater is." – Resident

"I actually like that one. It was a way of watering all of the extra parks and so forth without actually having to invest in all the extra pipes." – Resident

"When we had the last drought period, we seemed to be getting rain over the houses but not in the catchment areas, it was always frustrating to get that rain and just watch it flow away. I think if we'd had effective stormwater harvesting it would have been a lot less painful." – Resident

There appeared to be some uncertainty around the impact on the environment with some acknowledging that it would reduce pollution in the waterways while others thought it might reduce the amount of water returning to the river system.

"This is a really good option. It also stops stormwater from ending up in the sea, so it's better for the environment." – Resident

"Does capturing it have impacts on the rivers – if we capture more is there less going through the environmental system that would be detrimental?" – SME owner/manager

The issue of rainwater tanks was often raised in this discussion with again participants reiterating their support for houses being encouraged and supported by Council to collect rainwater for their own personal use.

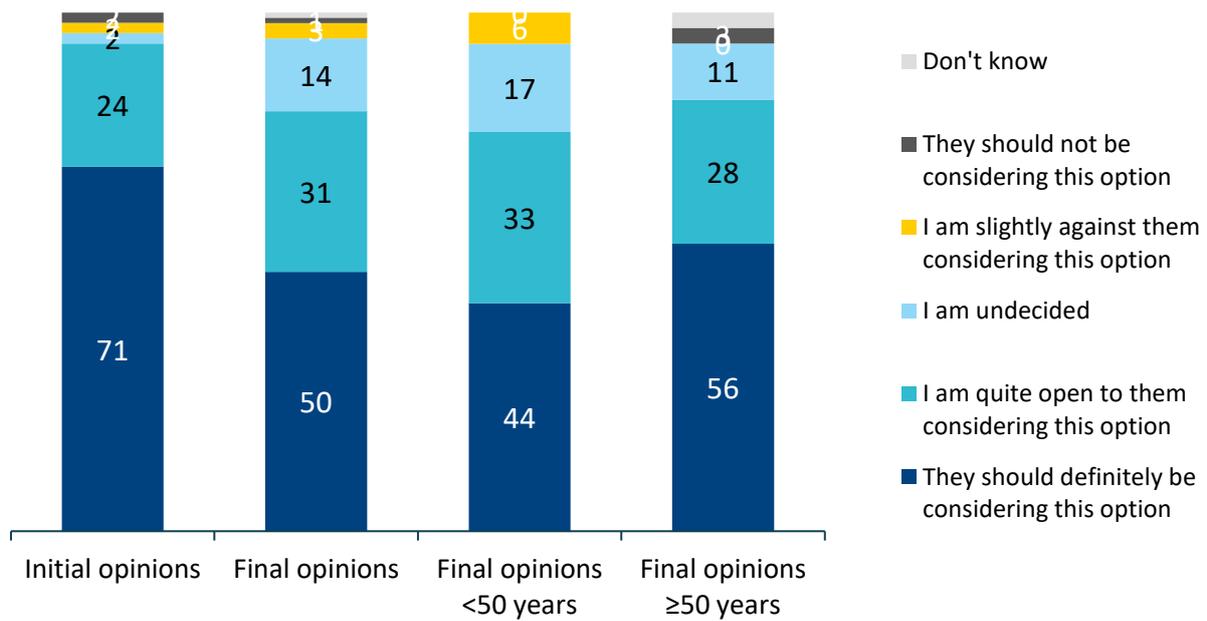
The main downside of this option was the high cost to build and operate, the strong reliance on rainfall, and consequently the low yield and reliability of stormwater harvesting. And as mentioned, a few also questioned whether or not capturing the water that usually goes down the drains would have any impact on the amount of water in our rivers if more of it was collected.

"It is a good idea but not extremely reliable as you are relying on rain still." – SME owner/manager

When asked to indicate how open they were to considering stormwater harvesting interestingly opinions varied considerably between those captured at the commencement of the forums and at the completion. At the end of the forums, following receipt of more information and discussions, 81% indicated they should definitely consider or were quite open to Council considering this, falling from 95% at the start. This decline in support may have been as a result of considering the high cost and relatively low yield.

Final opinions were more favourable amongst the 50 years and over participants (84% compared to 77% amongst those aged under 50 years).

Figure 22: Percentage of openness to Council considering stormwater harvesting



Q. Now you've had a chance to learn more information about the water supply options and hear other people's views, we'd like to ask you again how open you are to Council considering each one. For each option, please indicate how open you are to Council considering this as an option.

Base: All Round 2 forum and in-depth participants answering the question (n=72); <50 years (n=36); ≥50 years (n=36)

4.2.1.12 Attitudes toward recycled water (for non-drinking)

Using recycled water for non-drinking purposes, such as watering parks, gardens and golf courses was met with widespread support amongst participants across the forums and in-depth interviews. Most particularly liked the idea that water that would otherwise not have been utilised can be re-used, and that less clean drinking water is required for things like water plants.

"These things happen now in other areas. I like this idea, its water we already have, so we don't have to capture it again." – Resident

"Yes, flushing toilets with drinking water is an absolute crime. Technology needs to be available for everyone to do this... they should use it in parks - as long as it is treated and safe to the guidelines." – Resident

"I'm in favour of this. It's good if the water can be used outdoor, and then more drinking water can be used indoors." – Resident

Some were aware the Council currently uses recycled water and there was some level of awareness of new housing estates that have recycled water pipes.

Overall, there was appreciation of this option being reliable, and was seen to be particularly good when rainfall is low, so it was felt to be a good option to have in conjunction with other sources of water.

"It was interesting, I learnt a lot more through that video... I'm thinking about what the right combination of options might be, especially those that aren't reliant on nature, - and what is the right combination at the right time. It's a good option." – Resident

There was, however, some confusion regarding accessing this recycled water, with questions around whether or not Council was considering a separate pipe network that delivered recycled water to houses, and whether older houses could access recycled water.

"I'm a bit confused about recycling water and the purified one - is this the one that has the two pipes going into new housing estates?" – Resident

"We would all need a second lot of pipes into the house, wouldn't we? Could it just be in new houses? Existing would be tricky and expensive." – Resident

"I think it is a good idea for parks and green spaces. Is it practical around home areas? You can't dig out entire streets and that." – SME owner/manager

Concerns regarding using recycled water were mainly around the high cost to build and some minor concerns around the water quality and it being potentially mistakenly used or consumed by children, for example, or people who were not well informed about the use of recycled water or could not read the signage.

"Recycled water is good because it's got high reliability, but I don't like the high cost. I agree with recycled water, its high cost to build but its high reliability - alongside some of the others." – Resident

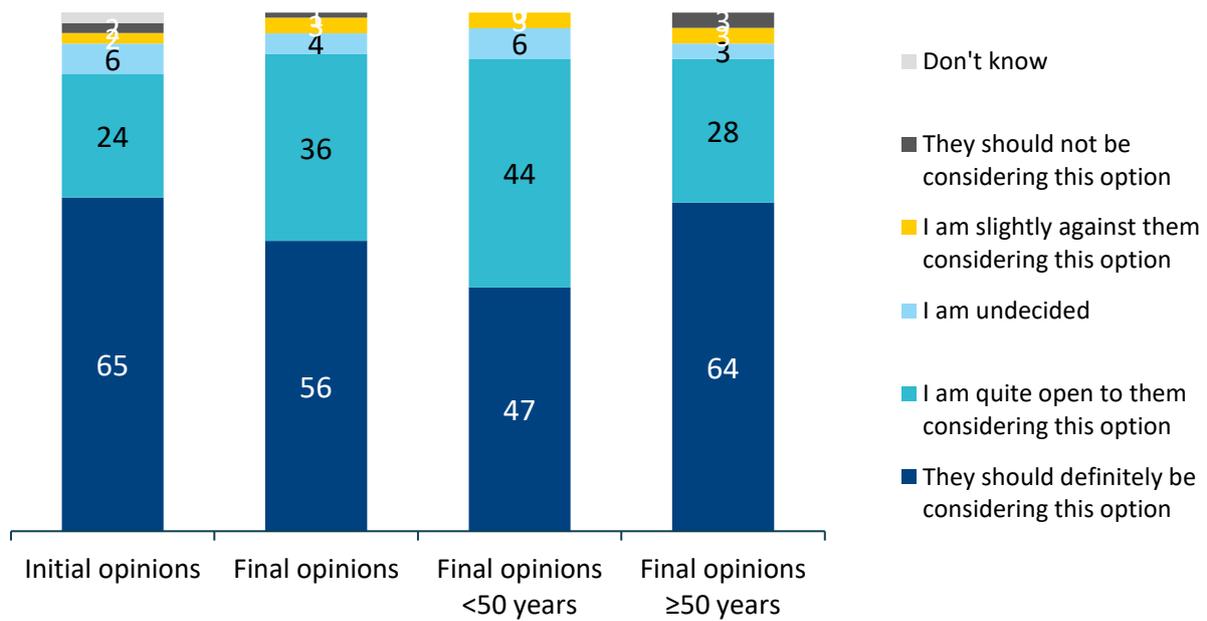
"My concern would be that we are just monitoring of the quality – and where the water is going and making sure it's used in the right places." – Resident

"I don't know enough but it sounds like a possibility that it could be mistaken for drinking. Children could be an issue. Could just have signs on the taps, but little children can't read.... they could put child proof taps on." – Resident

The polling results showed that the vast majority were at least quite open to this idea (92% indicated Council should definitely consider or they were quite open to Council considering recycled water for non-drinking). This was a similar proportion at the commencement of the forums although the level of high support fell slightly.

Again, participants aged 50 years and over were more positive towards recycled water for non-drinking than their younger counterparts.

Figure 23: Percentage of openness to Council considering recycled water (for non-drinking)



Q. Now you've had a chance to learn more information about the water supply options and hear other people's views, we'd like to ask you again how open you are to Council considering each one. For each option, please indicate how open you are to Council considering this as an option.

Base: All Round 2 forum and in-depth participants answering the question (n=72); <50 years (n=36); ≥50 years (n=36)

4.2.1.13 Attitudes toward dams

It was explained to participants that Central Coast currently have three dams, and that part of Council's considerations included raising the wall of Mangrove Creek Dam, constructing a new dam and constructing an additional transfer scheme between the dams.

Reactions to the idea of building a new dam were polarised, with some accepting of the idea, others being quite against it, and some being generally uncertain about building a new dam and wanting more information. It was appreciated that dams per se yielded a great deal of water (in comparison to some of the other options), were reasonably reliable (except in severe droughts) and had low on-going costs.

However, many participants were cognisant of the negative impact of building dams on communities where the dam is proposed and the negative impact on the environment and river system. Dams were felt to be often very contentious subjects that had the potential to upset people and cause passionate debates.

"There is always a lot of opposition to dams you know, so it seems that people are not overly happy about the idea of building dams all over the place and I'm not sure we've got the rainfall to fill them up." – Resident

"I'm not so keen on this option. They cause a lot of environmental damage.... I've heard bad stories about fish being impacted by dams." – Resident

"The construction of new dams means habitat loss so that's a bit con, so need to weigh this up. It depends on the environmental impact and whether it's acceptable, - it's hard to be in favour or against without knowing what's involved." – Resident

"The only thing wrong with dams is the releasing of water into the creeks and the flushing and what happens to the river system downstream, like the Murray Darling system." – Resident

Overall, however, there appeared to be stronger support for raising the wall of an existing dam rather than building a completely new one.

"I like the idea of building onto existing dams rather than new ones." – Resident

"I am opposed to any new dams. They are environmentally damaging compared to other options. Plus, cost and length of time to build them.... I don't want a new dam but to increase the levels of some of the dams we have might be a better option." – SME owner/manager

"I like the fact we have the potential to use existing infrastructure – raising walls of the dams we have." – Resident.

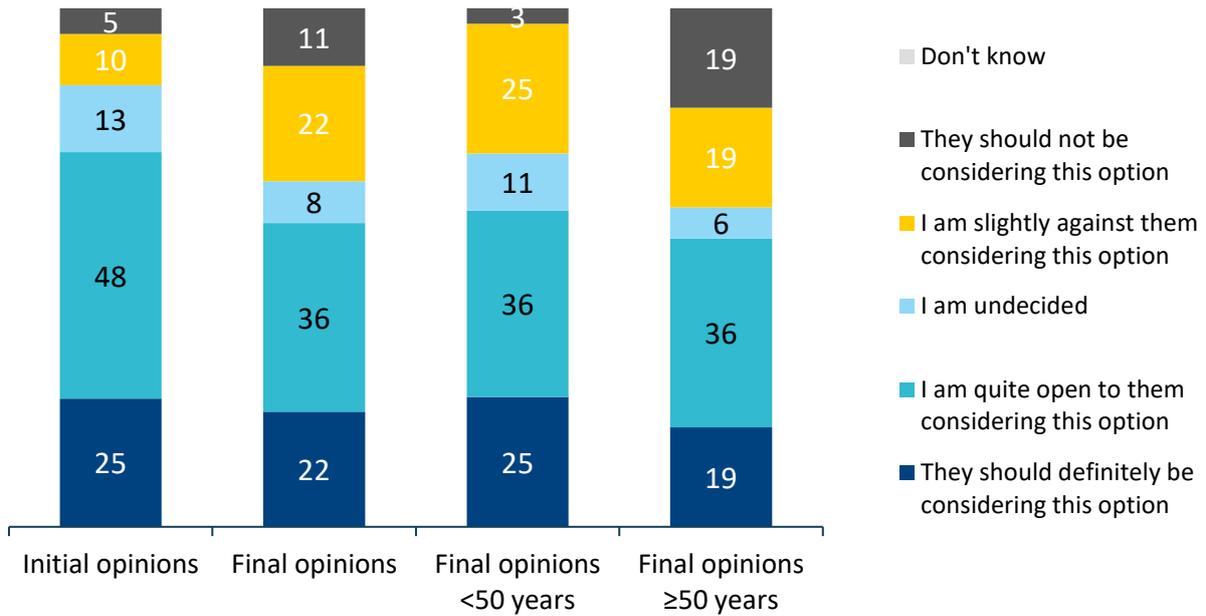
There were also a few questions around the notion that some of the current dams do not ever reach capacity, and that Council needed to ensure the dams reach capacity before we build a new dam.

"But Mangrove Dam has never been full though so increasing the capacity is a bit pointless." – Resident

"With the existing dams – it's never been above 75%, so with raising the dam surely they need to use the existing capacity?" – Resident

At the completion of the forums or in-depth interviews, 58% indicated that they were quite open to Council considering dams or that they should definitely consider them, with 33% being against the idea, reflecting the polarised views in the discussions. It must be noted that this included both the building of new dams and/or raising the walls of existing dams. The proportion feeling positive towards dams fell after further information, consideration and discussion, from 73% to 58%. There was little difference by age group.

Figure 24: Percentage of openness to Council considering dams



Q. Now you've had a chance to learn more information about the water supply options and hear other people's views, we'd like to ask you again how open you are to Council considering each one. For each option, please indicate how open you are to Council considering this as an option.

Base: All Round 2 forum and in-depth participants answering the question (n=72); <50 years (n=36); ≥50 years (n=36)

4.2.1.14 Attitudes toward groundwater

There were quite mixed reactions to greater use of groundwater in the future. While there was a reasonable amount of support expressed for the expanded use of groundwater resources in the Central Coast region, there was also a degree of opposition expressed in relation to this occurring. On one hand it was seen to be a readily available and inexpensive resource, while on the other there were some significant concerns in relation to the unknown impact that ground water extraction would have on the environment.

"I don't think they know enough about them at the moment. But if they can get that sort of information and figure that out, then this is a good readily available source that isn't too expensive to use." – Resident

For some there was no hesitation in supporting Council pursue this option.

"There's nothing wrong with ground water its clear and got lots of minerals in it." – Resident

"People can currently have their own bores, so it might be a good thing to do for the wider community." – Resident

Others expressed support but indicated that groundwater use was unlikely to be a single solution to the future water needs of the area or suggested that it would be best treated as a 'back-up' when other supply sources were falling short.

"It seems wise to continue doing it - alongside other things as well." – Resident

"Yes, I believe we should explore groundwater options, but not as the main source of drinking water, just to supplement current supply." – Resident

Regardless of their level of support, quite a few of the participants expressed a desire for more work to be done to understand potential impacts – before proceeding with any groundwater extraction.

"I'm OK with them exploring this but wouldn't want them to jump right into it." – Resident

"It depends on where they extract it. Some aquifers probably recharge really quickly." – Resident

"We'd really need to know the long-term impacts of tapping into water that's been untouched for so long." – Resident

However, the unknown aspect of this option actually led some to be opposed to it being considered.

"They don't know how much there is there, and which bits are more fragile. Some sources may take hundreds or thousands of years to replenish, so how can we tamper with it?" – Resident

"I don't think the science is there to effectively manage this, and when Council starts discussing paleo rivers, I don't think they know where they go, and if they really have any real understanding of what using it does to the whole water ecosystem." – Resident

Similarly, there was a perception that use of groundwater sources was not an ongoing solution and may result in the depletion of a finite resource.

"It seems like it is robbing a finite resource." – Resident

"It seems like a risky thing to rely on it." – Resident

There was also an expression of scepticism regarding the information that Council had provided on this option. Some simply didn't believe that it could have a low social or environmental impact.

"The social and environmental impact of that is quite understated. I don't think we are being told everything to be honest." – SME owner/manager

"It can take between 500-1000 years to refill - how can that be low environmental impact?" – SME owner/manager

Discussion relating to this option also raised several questions, most of which were answered within the break-out sessions, relating to potential subsidence, the environmental impact, and what could happen if 'too much' ground water was extracted.

"Does it cause issues with subsidence?" – Resident

"What is in the space instead of the water? Is it air? How does that work?" – Resident

"What is the impact on the biome beneath the ground?" – Resident

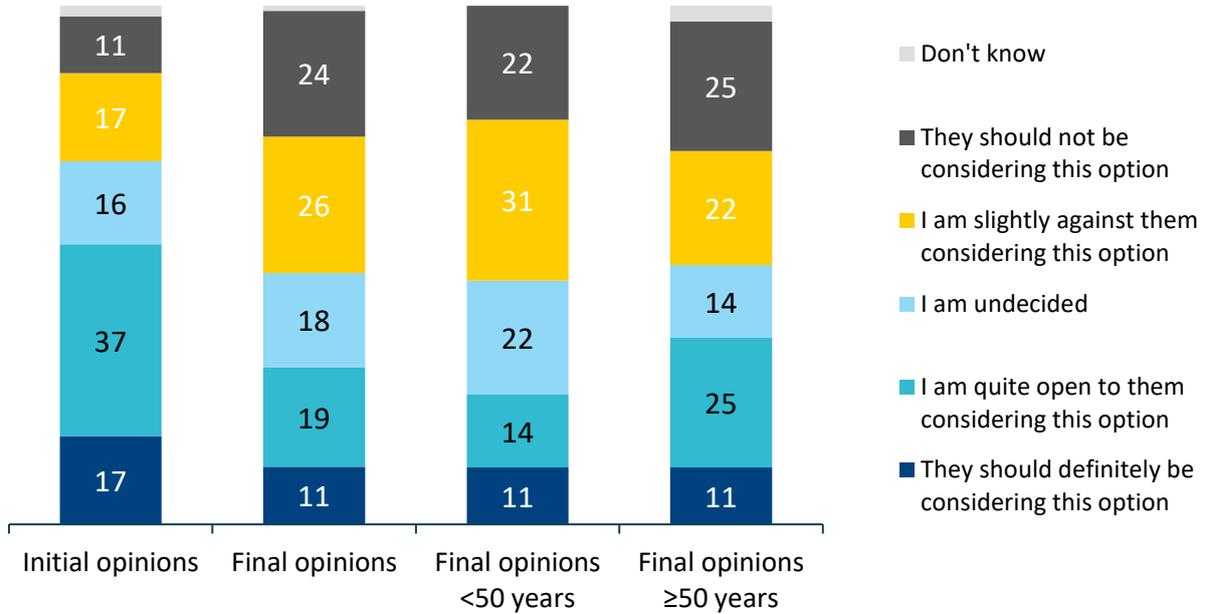
"I wonder what will happen if they take too much groundwater out." – Resident

As is shown in Figure 25, initially the majority of participants had shown support for Council considering this option (54%), with an additional 16% being undecided, and 28% being opposed.

However, after the discussion session support decreased to 30% in total, with 50% indicating that they were against this option being considered. This change most likely resulted as a reaction to the environmental concerns that were expressed during the break-out sessions.

The younger participants were the least likely to be supportive of groundwater (only 25% were), while the older participants were somewhat more supportive (36% in total).

Figure 25: Percentage of openness to Council considering groundwater



Q. Now you've had a chance to learn more information about the water supply options and hear other people's views, we'd like to ask you again how open you are to Council considering each one. For each option, please indicate how open you are to Council considering this as an option.

Base: All Round 2 forum and in-depth participants answering the question (n=72); <50 years (n=36); ≥50 years (n=36)

4.2.1.15 Attitudes toward desalination

The desalination option was one that the research participants were already relatively familiar with, and there were a variety of views expressed in relation to this option being considered for the Central Coast region. In overall terms, while some saw a clear advantage in using such a readily available water source, many were concerned about the cost (to build and operate) as well as the environmental impact it would have (in terms of energy consumption and the brine that it produces).

Some reacted positively to this option from the outset, with these reactions tending to be based on experience in using water from a desalination process in another country, or at sea.

"We should be supporting this type of supply. I see it as essential moving forward." – SME owner/manager

"I know it's a viable option. I've been at sea where the ship used desalinated water. I'm happy with the quality of water it produces." – Resident

Some participants were also pleased with the reliability of this supply option.

"It is highly reliable whereas a lot of the others are not. You have a source of water there that's guaranteed." – Resident

"I like that it has a higher water yield." – Resident

Some also expressed conditional support – indicating that they would be happy for it to be used if the plant was supported by a renewable energy source.

"I think if you can overcome the energy problem it's a goer. It's a readily available source, and I can see it being used more and more with climate changes happening." – Resident

Even so, there was some vocal opposition to this option. Some of this seemed to stem to the Sydney experience where (it was believed) there was a high cost plant being underutilised, but also in term of the build and operational costs.

"No way! I'm super against it. It has been a colossal waste of money in Sydney. It's a complete white elephant. It sat unused for years and years and years at a massive cost to everybody." – Resident

"There's that tragic example of the one that's been built in Sydney. Things got dry so they built it. They now charge Sydney \$500,000 a day because they built this monstrosity. It's never been used." – Resident

"It would use a massive amount of energy." – Resident

"The biggest issue is the cost. We can't afford to throw money around at the moment." – Resident

In addition, the environmental impact of a desalination plant appeared to be a considerable barrier.

"The brine outlets to the ocean are not good and it should be only used in absolute emergencies." – Resident

"It's a nice solution for planners because it's easy and you can rely on the yield, but it comes with such a high impact and cost to the environment." – SME owner/manager

"I'm not so sure about the brine aspect. I'm happy with the use of seawater, but I'm worried about the environmental impact." – Resident

There were a range of questions to emerge in relation to use of desalination as an option for the Central Coast region, including a desire for more details about the location being considered, the longevity of the plant, and whether or not Council would own the asset. A few respondents also asked about the feasibility of offsetting power use by constructing a solar farm to generate power for the plant.

"Where in Toukley would it be placed?" – Resident

"How long does a desalination plant last for?" – Resident

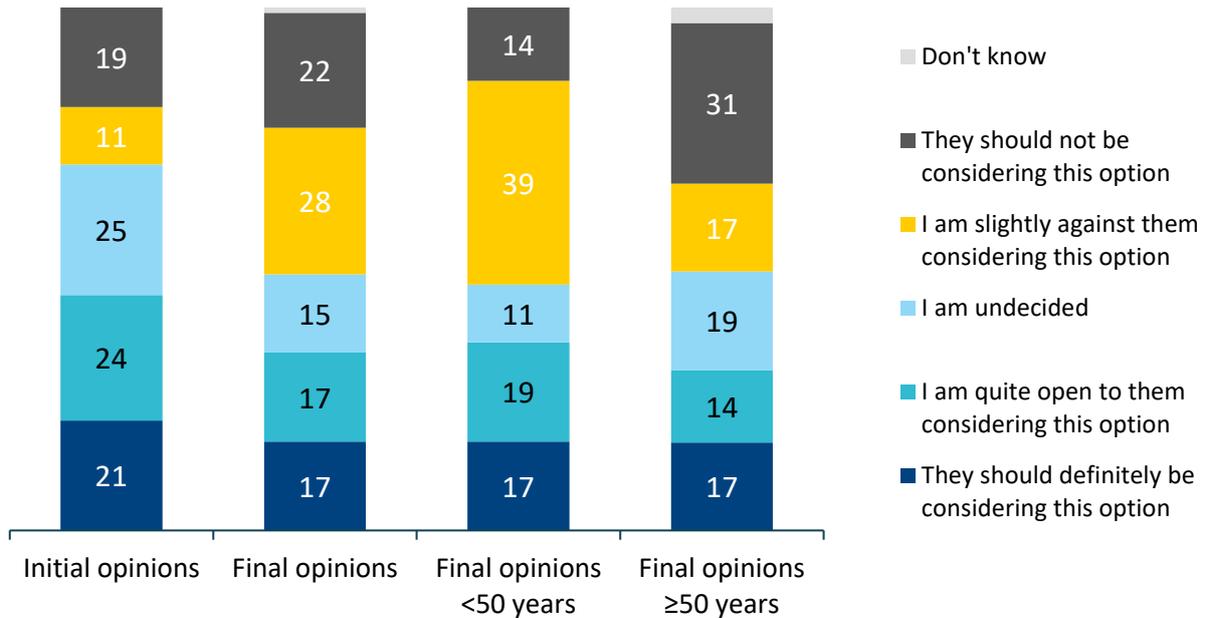
"Is it going to be something the Council owns or like the Sydney one we'd pay for something not used much?" – SME owner/manager

"Is it possible to put in a solar energy farm there to power it?" – Resident

As is shown in Figure 26, just under half of all participants indicated that they were open to or that Council should definitely consider desalination during the initial exercise (45%), with an additional quarter (25%) being undecided, and 30% being opposed. However, after the discussion session support decreased to 34% in total, with 50% indicating that they were against this option being considered after they had learnt more about it and deliberated with their peers.

The younger participants were marginally more supportive of the desalination option being considered (36% in total showed support, compared to 31% amongst those aged 50+).

Figure 26: Percentage of openness to Council considering desalination



Q. Now you've had a chance to learn more information about the water supply options and hear other people's views, we'd like to ask you again how open you are to Council considering each one. For each option, please indicate how open you are to Council considering this as an option.

Base: All Round 2 forum and in-depth participants answering the question (n=72); <50 years (n=36); ≥50 years (n=36)

4.2.1.16 Attitudes toward water sharing between regions (i.e. transferring water across regions to where it is needed most)

The research participants displayed quite a high level of interest in this option and tended to respond quite positively to it. It was something that was already known to have had benefit for the region and was seen to be a simple and cost-effective option to implement. However, it was not seen to be a stand-alone solution, and the most common questions raised related to what would happen when both regions are in need to water.

On the positive side, quite a few of the forum and in-depth interview participants seemed impressed with the basic 'credentials' of this option – in terms of the build and operational costs, and low environmental impact.

"It has low environmental impact and seems easy to do", but the downside is that it is not so reliable.
– Resident

"I like it because you are using it over a much greater area, and not building new infrastructure. Energy costs won't be that high, and you could use renewable energy." – SME owner/manager

While many did, not everyone knew that there was a water sharing plan currently in place with Hunter Water, and they tended to respond positively to this news – particularly given that the Central Coast region had benefitted from the arrangement during the last drought period.

"It worked for us previously during the drought, so I think it's a good option." – Resident

"I didn't realise that we already had those pipelines in place and now that I know more about it, I feel more comfortable about it." – Resident

The idea of sharing resources also came through to some extent, and a few of the participants expressed a desire for water sharing beyond just the Hunter region.

"It's cross-community collaboration. I like it." – Resident

"I like the idea of using existing resources in different areas." – Resident

"I like this one. It is a good idea. I am just a little disappointed we can't water share with Sydney." – SME owner/manager

While there didn't appear to be any strong opposition to this option, there were questions to emerge in relation to how it would operate when both regions were in short supply, and how effective it was as a solution for the region.

"My only issue would be with when there is a drought and both areas are struggling. What happens then?" – Resident

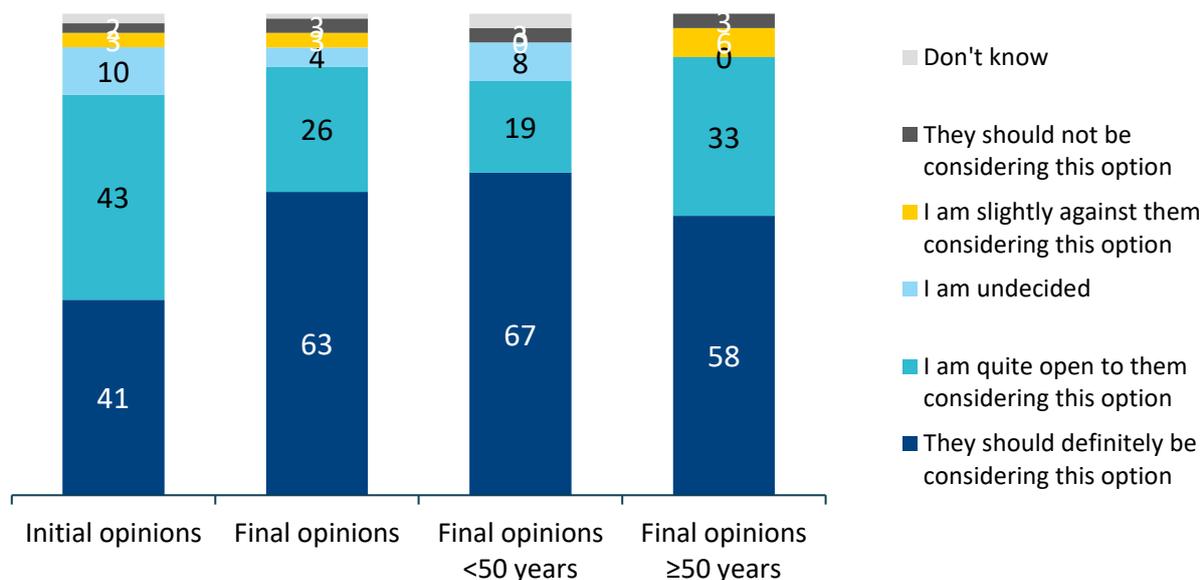
"I wouldn't feel comfortable if it was the only option being explored." – Resident

"I can see that this is needed, but it would have to be in combination with other options - this wouldn't be the solution by itself." – Resident

As is shown in Figure 27, there was a high level of support for water sharing both in the initial and the final read conducted. In the initial exercise, more than 8 in 10 participants showed support for this option being considered by Council (84%), with 10% being undecided, and 5% being opposed. Support actually increased after the discussion session (89% in total indicated that it was something that either definitely should be considered, or that they were open to being considered), with the proportion in the 'definitely' category also increasing from the initial to the final read.

The younger participants were more likely to indicate that they thought that this option was one that definitely should be considered (67%, compared to 58% amongst those aged 50+).

Figure 27: Percentage of openness to Council considering water sharing between regions



Q. Now you've had a chance to learn more information about the water supply options and hear other people's views, we'd like to ask you again how open you are to Council considering each one. For each option, please indicate how open you are to Council considering this as an option.

Base: All Round 2 forum and in-depth participants answering the question (n=72); <50 years (n=36); ≥50 years (n=36)

4.2.1.17 Attitudes toward environmental flow substitution (putting recycled water back into river system)

This option tended to require further explanation during the forum break-out sessions, potentially because it was something that participants had not heard of previously. As a result, the reactions tended to be somewhat muted – though again, there were a small number of participants that had formed strong views on the option based on what they had learned.

The questions raised tended to relate to the purity of the water and the likely environmental impact of releasing treated water back into the natural river system.

"Is there a risk of cleaning the water too much and impacting the environment by putting purified water back into it?" – Resident

"How does it impact on the native wildlife?" – Resident

"I would like to know more about the environmental impact of this option." – Resident

"What about o2 levels in the water? And the micro-organisms in the water." – SME owner/manager

Those who reacted positively to this option tended to make reference to the way that it was supporting the environment by maintaining the natural flow in the river, and the water quality of the treated water returned to the system as reasons for their response.

"It involves the same amount of water flowing through the environment, so it's a positive that we wouldn't be detracting from that." – Resident

"I don't think there's a problem with it as long as the water goes through a thorough treatment process." – Resident

"I think it could be Ok if it's well monitored." – Resident

Some also reacted positively toward the fact that the build and operational costs were not as high as they were with some of the other options.

"I like the fact that we can change our current system to include this, but it wouldn't involve as much as a desal plant or building a dam." – SME owner/manager

"This sounds like it could be phased in pretty quickly and smoothly. It looks like half of the infrastructure is already there." – Resident

As a one-off statement, one participant also suggested that the re-introduction of the treated water could present the opportunity to overcome an issue with the current system (if implemented correctly).

"At the moment weirs cause issues because they slow the water down and then the water that is released through it moves rapidly and causes bank erosion. So, if this system could do something to eliminate that issue it would be good." – Resident

Overall, though quite several participants were quite neutral in their responses.

"I sort of think I need to know more about it, but the idea seems good. I'm Ok with it." – Resident

"I just don't know enough about it. But I agree it sounds quite interesting." – Resident

"I've never heard of this one before. Its sounds quite clever." – Resident

In terms of negative responses, some participants just seemed to have an initial 'gut feeling' that this option could cause environmental/ecological problems, while a few simply reacted to the values summary that was presented to them.

"It rings alarm bells straight away." – Resident

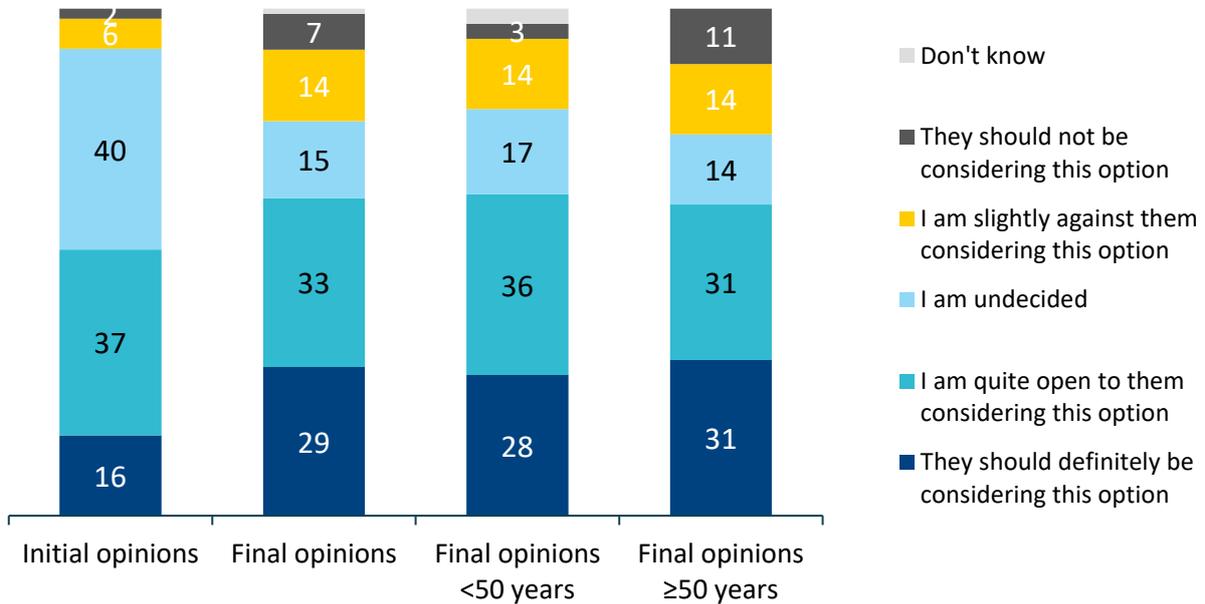
"We have trouble with our waterways as it is. We mess with pH balances as it is. We would be treating the water, and I don't trust that we would do it properly." – Resident

"This one is not my favourite - just looking at the cost and potential environmental impact. I'm not liking it all that much." – Resident

As is shown in Figure 28, there was a relatively high proportion of participants indicating that they were undecided as to whether or not this option should be considered during the initial exercise (40%) – though more than half still showed support for it at that stage (53% indicated that it either definitely should be considered, or that they were open to it being considered). However, after the presentation from the Council representative that explained what the option involved, and after they had discussed the option within their break-out session, support increased to 62% in total (with the undecided proportion decreasing to 15%, and 21% indicating that they weren't supportive of the idea).

There was not much difference between the younger and older participants in terms of their final support rating – though the older participants were more likely to be opposed to environmental flow substitution.

Figure 28: Percentage of openness to Council considering environmental flow substitution



Q. Now you've had a chance to learn more information about the water supply options and hear other people's views, we'd like to ask you again how open you are to Council considering each one. For each option, please indicate how open you are to Council considering this as an option.

Base: All Round 2 forum and in-depth participants answering the question (n=72); <50 years (n=36); ≥50 years (n=36)

4.2.1.18 Attitudes toward purified recycled water (for drinking)

The forum and in-depth interview participants were mostly supportive of the idea of purified water being treated to the level that it can be included with the drinking water supply. However, while some participants were strongly in favour of this option being considered, there were also some expressions of concern and uncertainty raised.

Some simply expressed outright support.

"I think this is way overdue." – Resident

"A few years ago, everyone had objections to this, but I think we've just got to get over it." – Resident

"Recycling anything is a good idea, particularly as the population increases." – SME owner/manager

The main reason for voicing support for this option seemed to be that it had been used successfully elsewhere and they had not heard any bad reports about its use.

"It's already being done isn't it? Adelaide is drinking Canberra's water." – Resident

"Others have been doing it in other parts of the world for 50-60 years." – Resident

Others voiced support for particular aspects of the option that was outlined to them and trusted the Australian guidelines for drinking water quality.

"I like the bit about high reliability, we can't afford to be so reliant on rainfall." – SME owner/manager

Within some of the in-depth interviews and break-out sessions there were questions relating to why the treated water would be put back into the river/dam system, and not used as a direct water source. While a few saw this as a waste (suggesting it resulted in the water being treated twice), it provided peace of mind for others.

"Why don't they just use it directly?" – Resident

"I just thought it would be pumped straight back into the system rather than upstream of the weir. This idea makes it a lot better for me." – SME owner/manager

Some participants had questions and concerns that were able to be answered during the break-out sessions, and this tended to lead to a discussion (within most break-out groups) of the need for education in relation to this option. There was a call for residents to be informed of what the recycling process involved, and of what quality assurances they could make.

"Consumer education needed so that residents know how it would work." – Resident

"I would want to know how it was treated, how it's tested, how it compares with normal water and then make a decision." – Resident

The potential 'yuck' factor of drinking water that was derived from sewerage was both raised by participants and explored via prompting in sessions where it had not already emerged. For many participants there was recognition of this fact, but assurances of the treatment process ultimately resulted in them being comfortable with the idea of drinking purified water. However, some (though fewer in number) did not seem to be able to overcome the idea of the water source origin.

"Once water is pure it's pure – it doesn't matter about the origin." – Resident

"Standards will need to be met, so I'm not concerned." – Resident

"I think it's weird and gross. I don't want to think that I'm drinking recycled poo. I just wouldn't waste time and money on it." – Resident

"It is poo water, it is septic. It puts me off a bit but actually it is the cost that puts me off more." – SME owner/manager

Another fairly common concern was that drugs and pathogens that participants believed to be within the sewerage system would not be extracted by the treatment process – and would therefore end up in their drinking water.

"I'm concerned that drugs and pharmaceuticals will be getting into our water source." – Resident

"Would it extract COVID and other bacteria? We keep hearing that it's in our sewerage." – Resident

Some also expressed concern in relation to the cost of this option. While the focus of this cost seemed to be on the operational side, some were also concerned that it would be costly to build.

"I think it is good, but I just worry about how much it costs to build and operate and whether it will be farmed out to a contractor. I wouldn't want it farmed out. I have concerns about that." – SME owner/manager

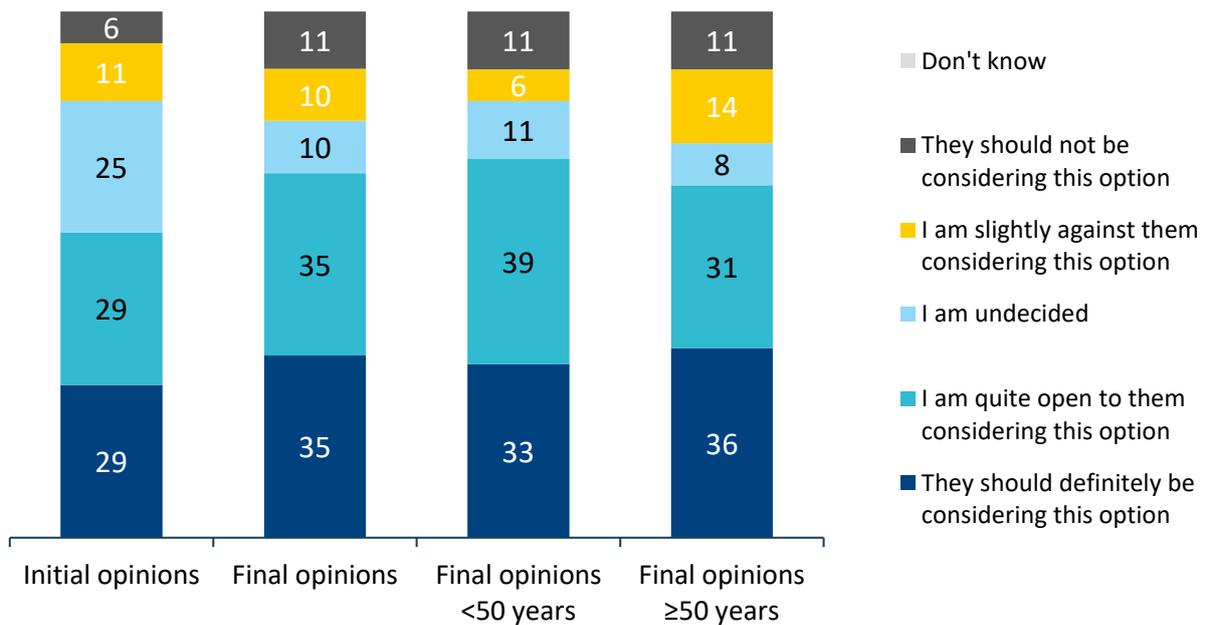
"My only problem is the high costs involved in building and operating it." – Resident

"The high cost to build isn't so bad, it's the ongoing cost that's the worry." – Resident

As is shown in Figure 29, more than half of all participants initially indicated a level of support for the use of purified recycled water for drinking (58% indicated that it either definitely should be considered, or that they were open to it being considered). A further quarter were undecided (25%), while 17% were opposed to it being considered. However, after the presentation from the Council, and the discussion with their peers during their break-out session, support increased to 70% in total (with the undecided proportion decreasing to 10%, and 21% indicating that they weren't supportive of the idea).

The younger participants were marginally more likely to indicate that they thought that this option was one that should be considered (72%, compared to 67% amongst those aged 50+).

Figure 29: Percentage of openness to Council considering purified recycled water (for drinking)



Q. Now you've had a chance to learn more information about the water supply options and hear other people's views, we'd like to ask you again how open you are to Council considering each one. For each option, please indicate how open you are to Council considering this as an option.

Base: All Round 2 forum and in-depth participants answering the question (n=72); <50 years (n=36); ≥50 years (n=36)

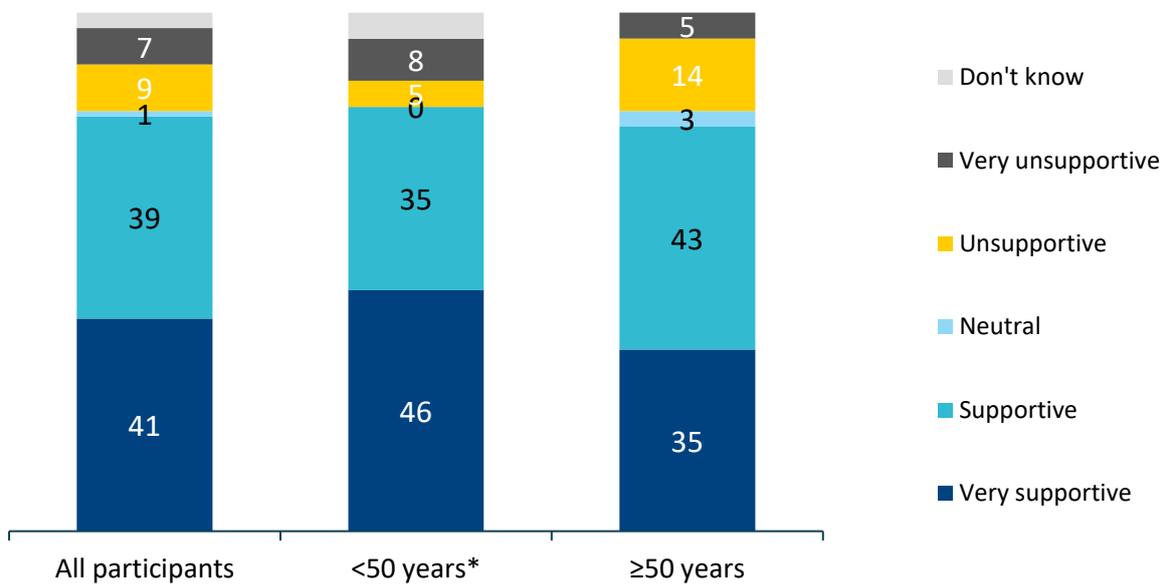
4.2.1.19 Attitudes toward project offsets

After the options were presented to the forum and in-depth interview participants, the concept of project offsets was introduced – involving compensating for impacts on the environment or biodiversity at one site through activities at another site.

The large majority of the research participants were supportive of this idea (80% either ‘very supportive’ or ‘supportive’), with 16% opposing the idea (in total).

Support for project offsets was stronger amongst the younger participants than it was amongst the older participants – with 46% of those under the age of 50 indicating that they were ‘very supportive’ of project offsets, compared to 35% of those aged 50 or more.

Figure 30: Percentage of openness to Council considering project offset



Q. How supportive would you be of Council investing in offset programs (e.g. investing in wind or solar energy to lessen the environmental impact of a desal plant; or purchasing additional land to offset habitat loss during a dam construction).

Base: All Round 2 forum and in-depth participants answering the question (n=74); <50 years (n=37); ≥50 years (n=37)

Summary of final option preferences (after information and discussion)

The chart below summarises the final set of polling results for all the water supply and demand options at the completion of the forums and in-depth interviews, after information being provided by Council and discussions of the options.

When combining those who felt Council should definitely consider the option with those that are 'quite open' to Council considering the option (i.e. total support) the highest level of support was obtained for:

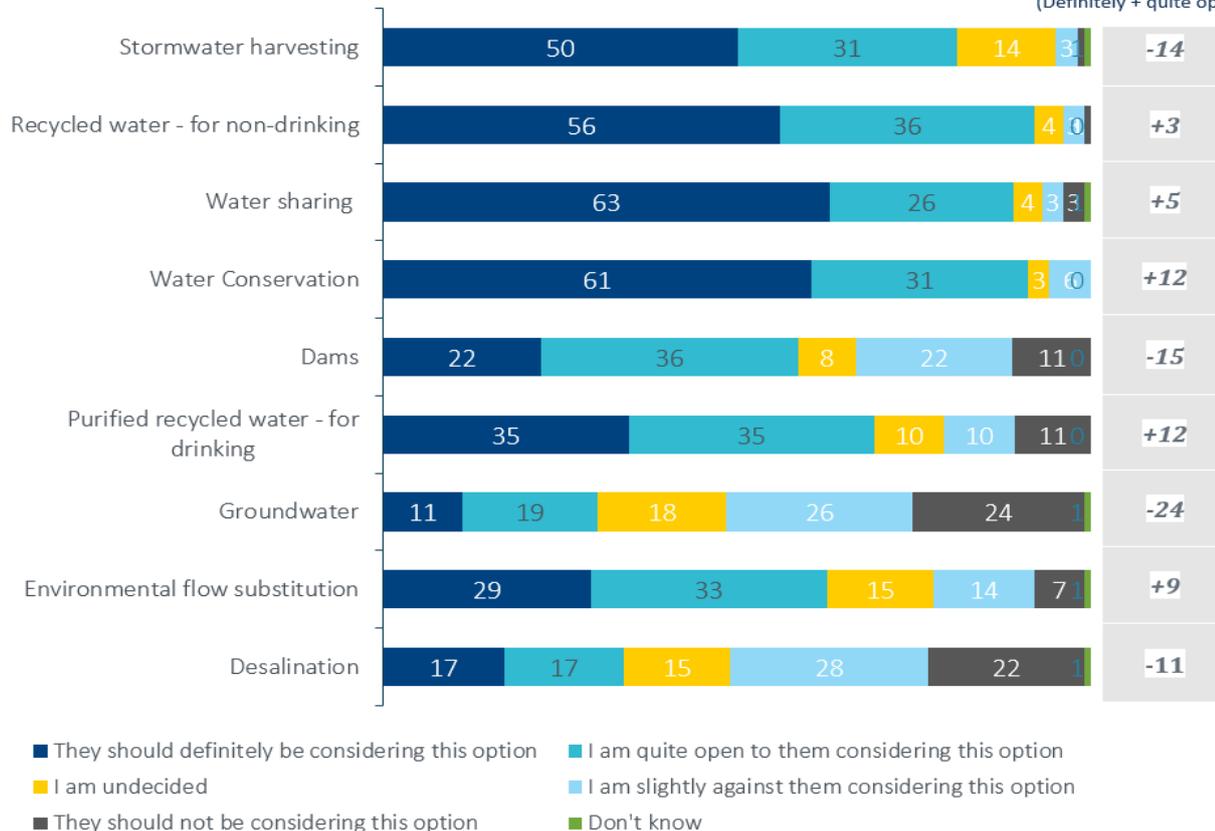
- water conservation and recycled water for non-drinking equally, followed by
- water sharing between regions, and
- stormwater harvesting.

Following on from this were purified recycled water for drinking, environmental flow substitution, dams, desalination and groundwater.

Compared to the level of openness for each option at the start of the forums and in-depth interviews, the main changes were increased total support for both water conservation and purified recycled water for drinking, and lower support for groundwater, stormwater harvesting and desalination.

Interestingly while there remained some uncertainty and negativity towards Purified Recycled Water for drinking, it was evident that there is the potential for significant changes in perceptions (for the positive), in the future with greater information provided.

Figure 31: Percentage of final openness to Council considering each of the water supply and demand options
 Change in net support between start and end of forums/in-depths (Definitely + quite open)



Q. There are many options Central Coast Council could consider to ensure there will be enough water for our region into the future, for each option, please indicate how open you are to Council considering this as an option (regardless of how much you know about each option).

Base: All Round 2 forum and in-depth participants answering the questions.

Rainwater tanks rebate

A final issue was put to participants regarding likelihood to install a rainwater tank in their home if Council had a rebate scheme. It was explained that there are two rainwater tanks that Council are considering: – firstly an external tank that is only connected for external use (i.e. to a garden tap, irrigation) and it is not for drinking and does not revert to town supply when empty so is not subject to water restrictions. Secondly a tank that is connected internally and externally (i.e. to toilets, washing machines, irrigation) that is also not for drinking but reverts to the town supply when it is empty, therefore it is subject to water restrictions.

Indicative costs for the tanks were provided for a 5000l tank – external: \$3,500-\$6000; and external and internal tank: \$4,500 - \$7,000

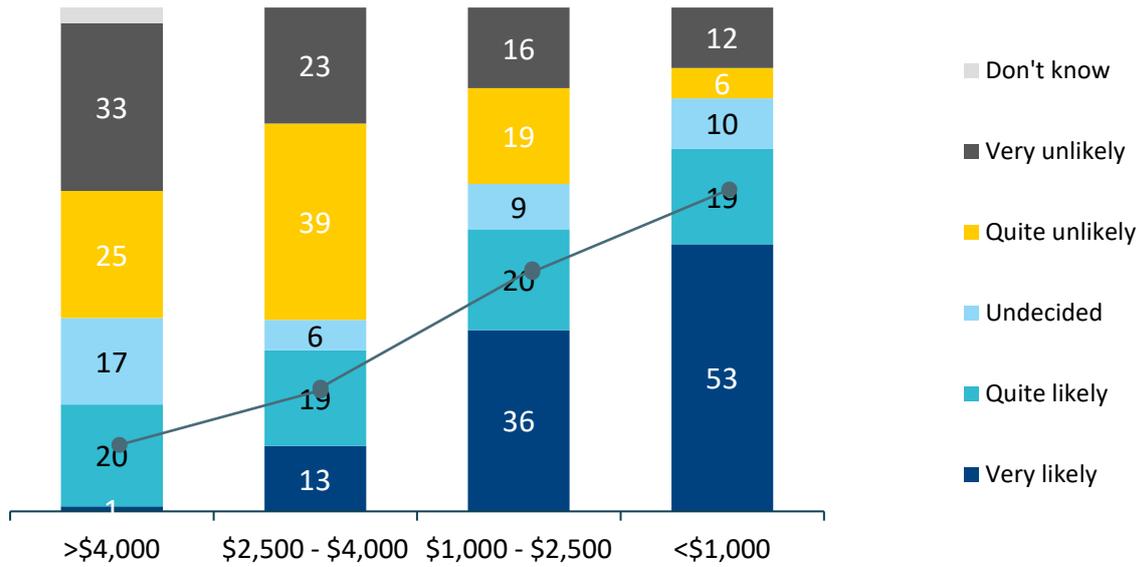
A series of polling questions then followed asking participants to indicate their likelihood to purchase a rainwater tank if Council contributed a varied amount of money.

4.2.1.20 External rainwater tanks

The chart below shows likelihood to purchase an external rainwater tank at four different price points. The amount participants would contribute included: over \$4,000; \$2,500-\$4,000; \$1,000-\$2,000; and less than \$1,000.

Not surprisingly likelihood to purchase an external rainwater tank increased as the contribution cost decreased. At a cost to them of more than \$4,000, 21% would be very or quite likely to purchase an external tank, while at a cost of less than \$1,000 likelihood to purchase increased to 72% (very + quite likely).

Figure 32: Percentage of likelihood of payment towards an external rainwater tank



Q. How likely would you be to pay over \$4,000 towards the cost of installing an external rainwater tank (and Council would pay the rest).

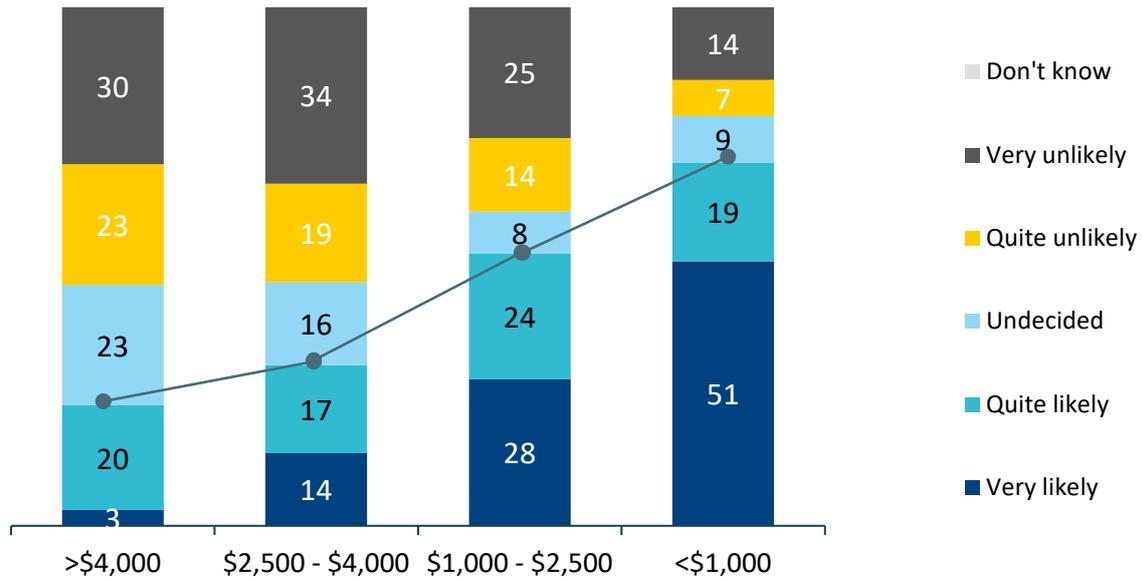
Base: All Round 2 forum and in-depth participants answering the question (n=69)

4.2.1.21 External and internal rainwater tanks

The same price points were tested for an external and internal rainwater tank, although the total cost of an externally and internally fitted rainwater tank is higher.

Again, likelihood to purchase a rainwater tank increased as the contribution cost decreased, and the proportion of participants likely to purchase was very similar to an external (only) rainwater tank. If participants contributed more than \$4,000, 23% would be very or quite likely to purchase an external and internal tank, while at a cost of less than \$1,000 likelihood to purchase increased to 70% (very + quite likely).

Figure 33: Percentage of likelihood of payment towards an internal and external rainwater tank



Q. How likely would you be to pay [over \$4,000 / \$2,500 - \$4,000 / \$1,000 - \$2,500 / less than \$1,000] towards the cost of installing an internal and external rainwater tank (and Council would pay the rest).

Base: All Round 2 forum and in-depth participants answering the question (n=30)

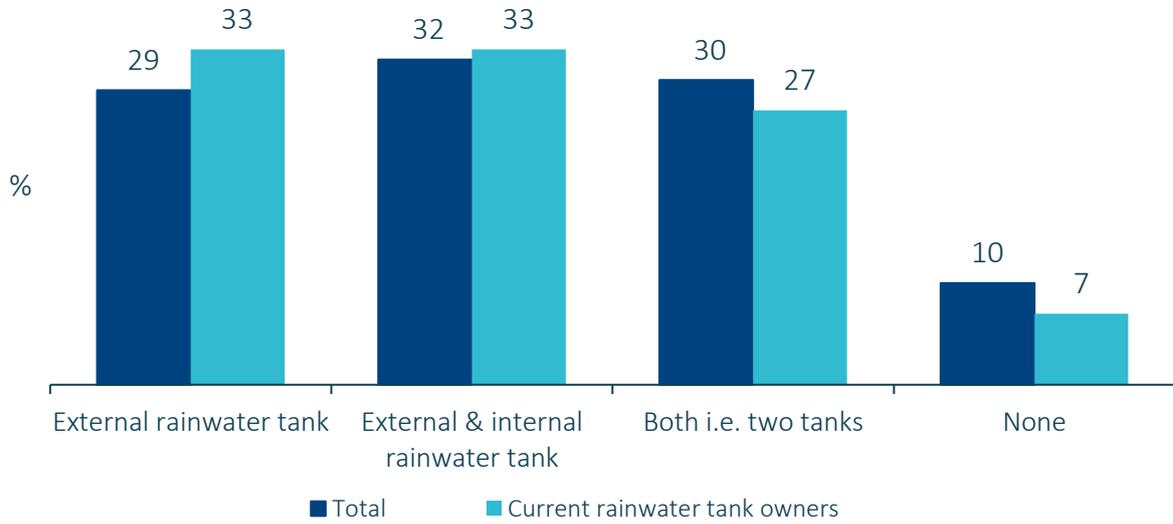
4.2.1.22 Rainwater tank preference

A final question was put to participant that asked if Council offered a subsidy that was acceptable to them which type of tank system would they prefer to purchase if any.

There was a similar level of interest for an external only tank as an external and internal tank (29% and 32% respectively). A further 30% indicated that at an acceptable price they would be interested in purchasing both types of rainwater tanks. Only 10% indicated that they were not interested in purchasing a rainwater tank.

Interestingly amongst the small sample of participants who currently owned a rainwater tank a similar pattern of responses occurred - suggesting that there is general interest in purchasing an additional tank if Council subsidised the cost of purchase.

Figure 34: Percentage of rainwater tank preference



Q. And overall, assuming the Council offered a subsidy that was acceptable to you, which type of tank would you prefer if any.

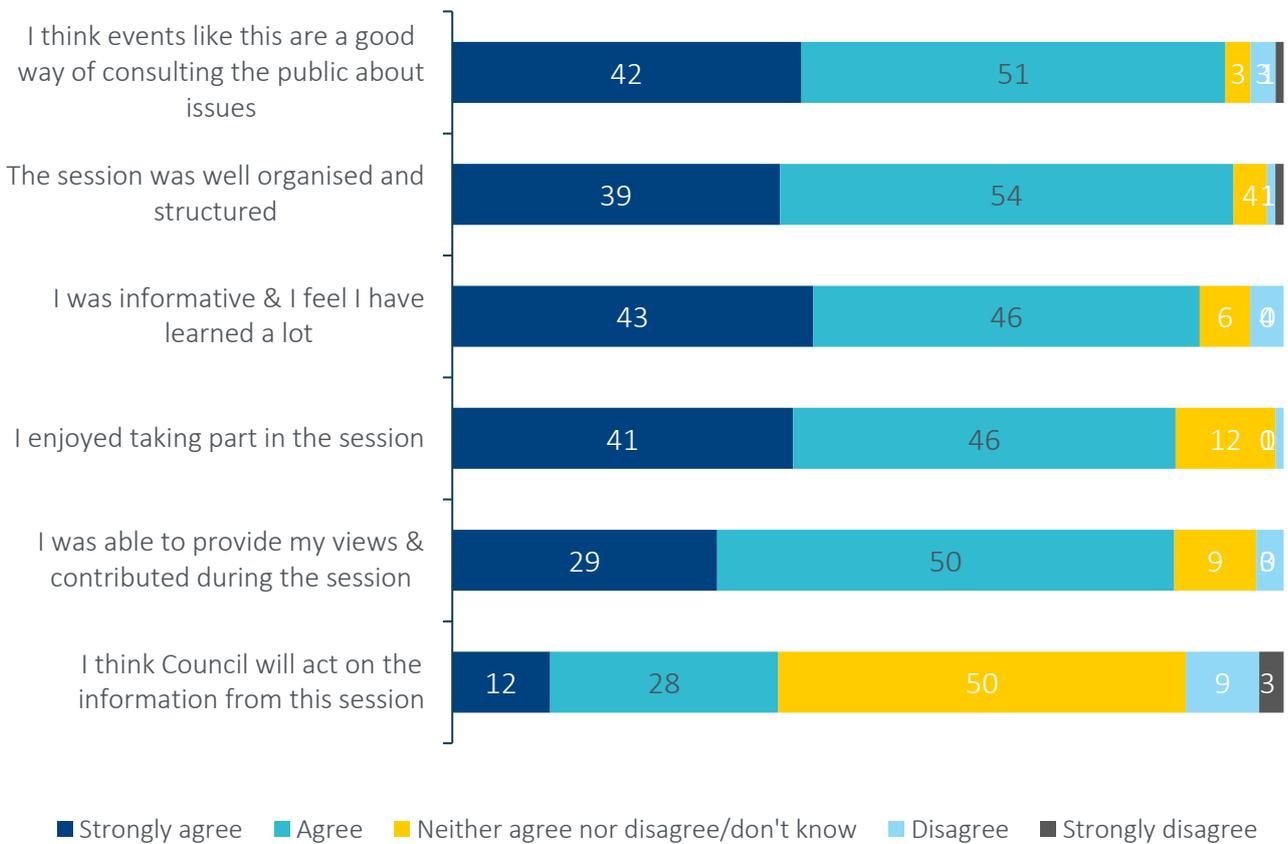
Base: All Round 2 forum and in-depth participants answering the question (n=73), and current owners of a rainwater tank (n=18)

Satisfaction with the engagement

As we did in the first round of engagement, following the forums participants were emailed a short questionnaire asking them to indicate their level of agreement with a series of statements regarding the forums.

As shown below, most participants agreed (93% strongly + slightly agreement) that events like this are a good way of consulting the public about issues and that the session was well organised and structured. A further 89% agreed that it was informative and that they have learned a lot, and 87% indicated that they enjoyed taking part in the session. There was lower agreement that they think Council will act on the information from the session (40%).

Figure 35: Percentage of satisfaction with the engagement



Please indicate your level of agreement with the following statements...
 Base: All forum 1 participants who answered this question (n=69)

4.3 Method 3 – Water options opt in survey

To build awareness of this project we also had a survey available online from 8 February to 21 March 2021.

The survey asked participants to review the factsheets or watch the seven-minute video on the three demand-side options and six supply side options before completing the survey.

In total 210 people completed this survey.

A copy of the survey [can be found here](#).

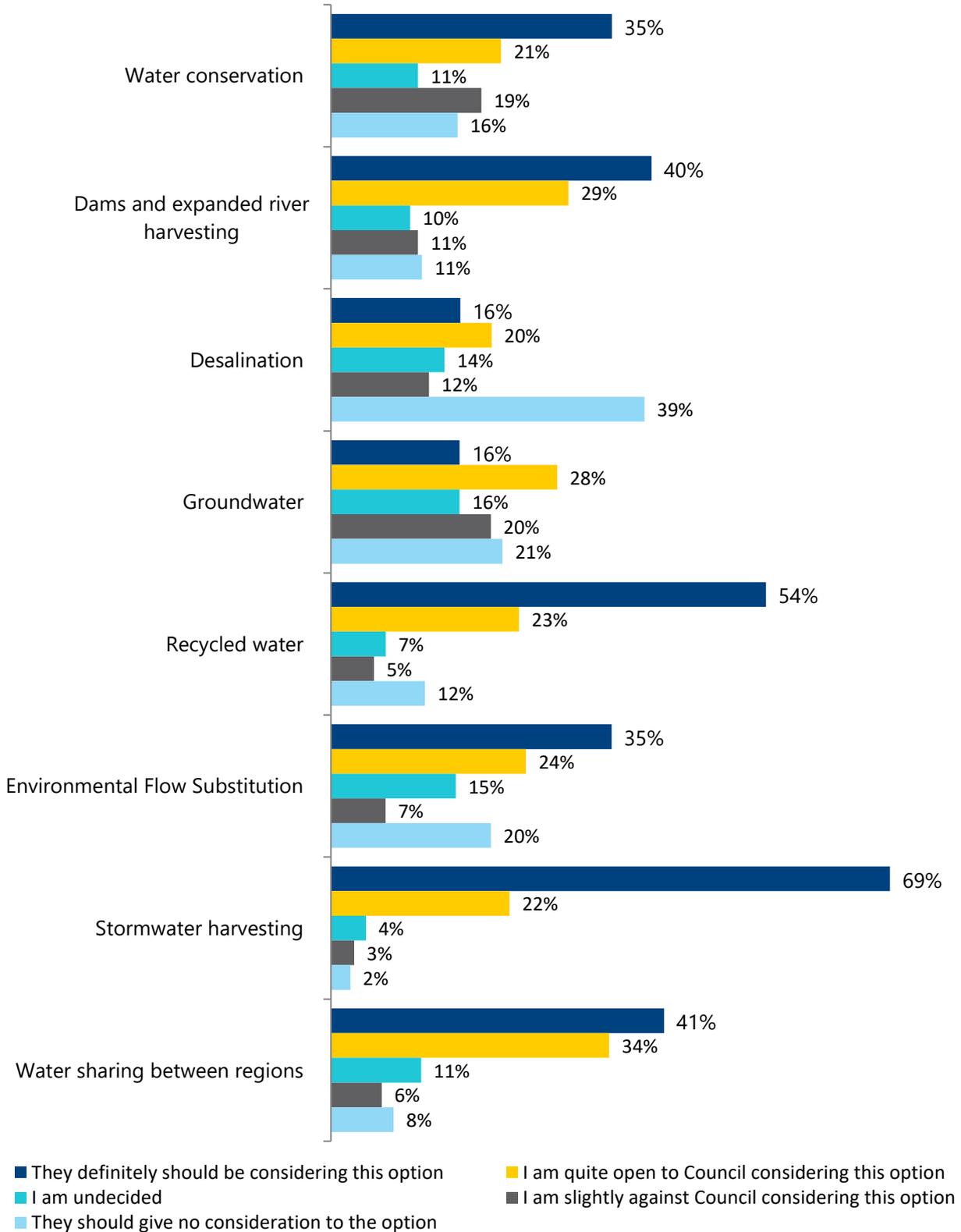
A note about sampling bias: This online survey was 'opt-in', which means participants proactively sought to complete the surveys as opposed to a sample or respondents being selected to more accurately reflect and represent the population makeup of the Central Coast community.

For this survey, 73% of respondents were over the age of 50.

Understanding community preferences for water supply and demand option types

4.3.1.1 Support levels for the water options

Figure 36: How open are you to Central Coast Council considering the following options?



Participants were then asked if there were any other comments they would like to make about these options, or any other water supply and demand option types they would like us to consider. Below is a sample of some of these responses:

Desalination plants are too harmful and aesthetically ugly to our precious coastal environment.

Maximise existing infrastructure by increasing dam / reservoir capacities, water storage facilities in suburbs and water transfer between the Hunter and Central Coast.

Purified recycled water should be ahead of any consideration for a desalination plant.

Desalination is the most reliable way to ensure there is enough water for all. Just do it.

Water restrictions should apply all year not only when dam levels drop.

The population is growing too rapidly for our water supply to keep up.

No new dams, raise the Mangrove Creek dam wall instead, then water harvest more by replacing water with treated - to a potable level - recycled water. Taking ground water is fraught because too little is known about recharge and its place in the ecosystem and geology.

Definitely no to wastewater for drinking.

Making it law for new homes must have 3000L tanks is great, how about encouraging older homes too?

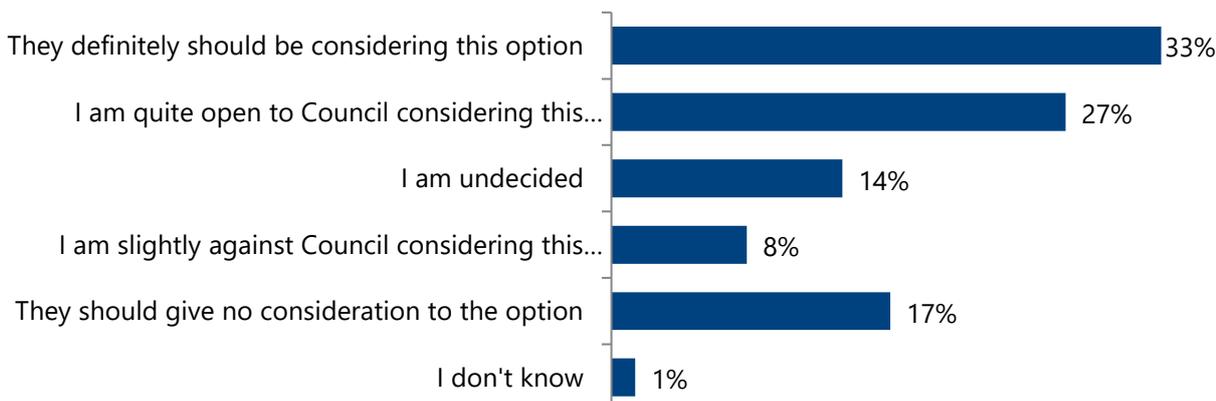
Build more dams and make them generate power as well as the water is fed to the community.

Environmental flow substitution appears to be the most effective long term solution. It is important to really look at the future and not take a short-term view plus consider the impact on cultural sites and the environment.

All questions, concerns and feedback have been addressed by Council in Section 5 – Council’s response.

4.3.1.2 Purified recycled water

Figure 37: How open are you to Council considering adding purified recycled water to existing drinking water sources to supplement supplies?



4.3.1.3 Rainwater tank subsidy

Council would like to know your opinion and preference on a potential Council-subsidised scheme to encourage our customers to invest in a rainwater tank for their property.

Rainwater tanks can have environmental and financial benefits as we capture natural rainwater to use on our properties, rather than letting it become surface run-off. Using the captured rainwater also means that you are saving valuable drinking water for other purposes.

We would like to know how much you might be willing to contribute to a 5 kilolitre rainwater tank installation (including pumps and connections), out of your own pocket - after Council's subsidy.

Costs vary from site to site, but a standard residential installation (including pumps and connections) is around \$4,000 - \$7,500 depending on whether it is connected for internal or external use, proximity to existing plumbing and electrical connections and restoration requirements.

Figure 38: For your property and usage, which would you prefer?

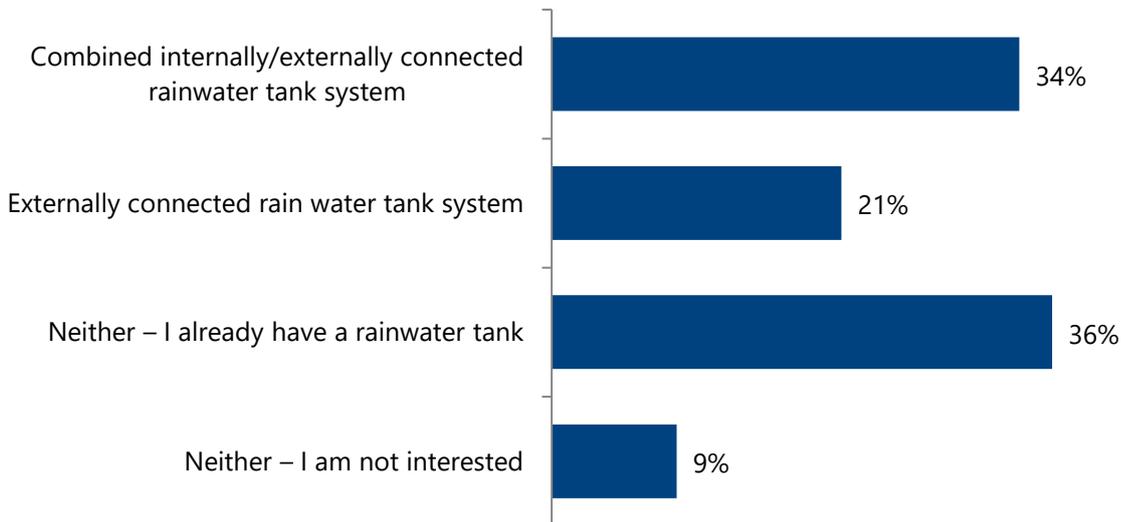
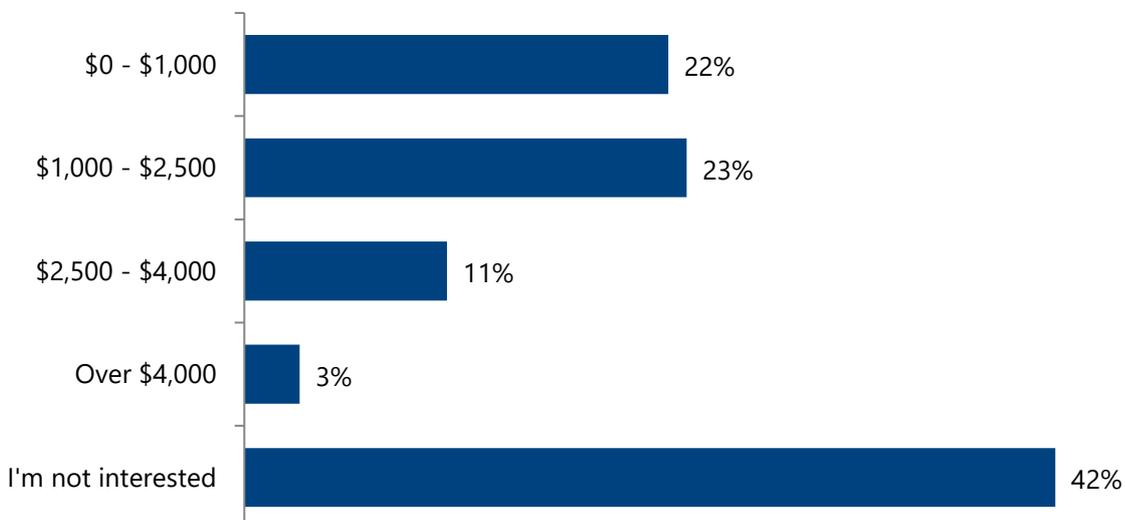
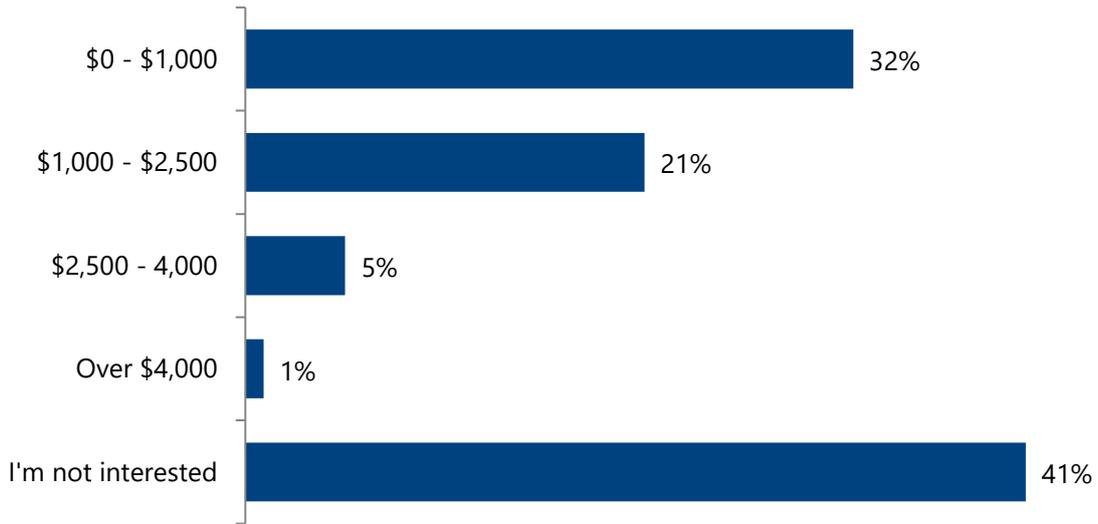


Figure 39: How much would you be willing to contribute for a tank that is connected internally and externally?



Central Coast Water Security Plan: Consultation Report

Figure 40: How much would you be willing to contribute for a rainwater tank that is only connected externally?



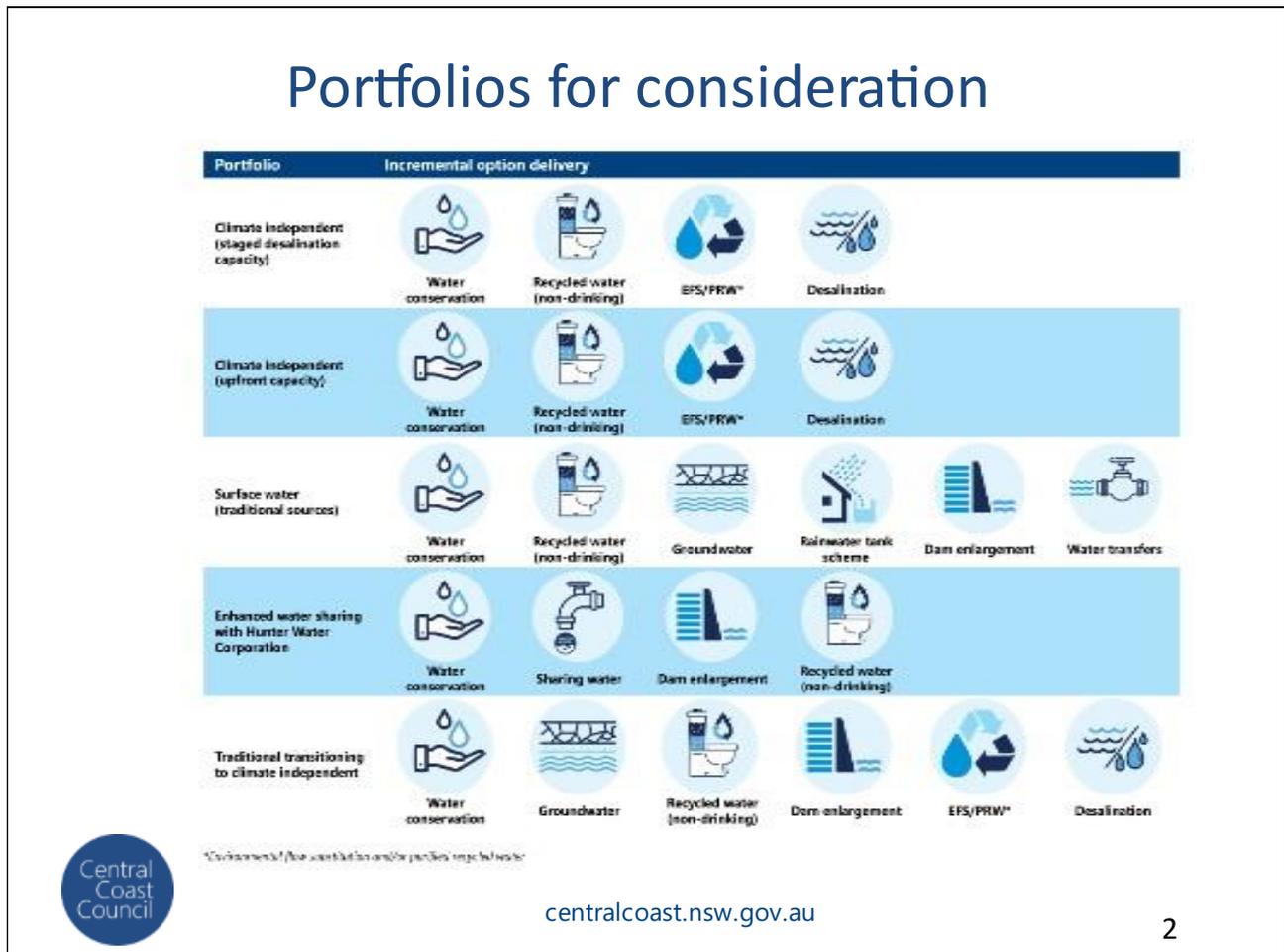
4.4 Method 4 – Deliberative forums and phone interviews, round 3

Initial reactions to a portfolio approach for water supply and demand options

At the commencement of the forums, participants were welcomed by the Woolcott Research & Engagement Lead Facilitator, who also carried out the acknowledgement of country and explained the structure of the session and guidelines. A representative from Central Coast Council then provided a brief re-cap of Council’s Central Coast Water Security Plan and an overview of the community engagement plan.

Council then presented the results of the previous forum regarding the water options that the community preferred be considered in future planning, and explained that Council had developed five portfolios within broad themes, with each portfolio having a range of four to six water supply options, as no single option will effectively meet the water needs of the Central Coast.

Following this presentation forum participants were assigned into breakout sessions to discuss their thoughts and opinions about this overall portfolio approach and the perceived appropriateness of the themes of the portfolios. Below is the summary chart of the portfolios shown to participants.



Overall, there were positive reactions to the concept of Council developing a portfolio of options, across the forums and in-depth interviews.

Most generally agreed that relying on only one or two sources of water in the future was potentially high risk while spreading the options was reducing the risk, if water was to run out in one or some of the options. The metaphor of 'not putting all your eggs in one basket' was frequently quoted by participants in relation to this sentiment.

"I don't think one approach would work. It's a good idea to have a range or plans of attack if one doesn't work then you have another" - Resident

"I agree you don't want to put all your eggs in one basket especially with unforeseeable circumstances that might arise with climate change" – Resident

"The portfolio idea is good. Different solutions can ensure that reliance on one is not 100%" – Resident

"I like that there are multiple options – to pick up the slack a little bit.....when it rains certain ones will kick in, it makes sense to use different solutions" - Resident

"I'd like to see the numbers, but the approach is good. No one single thing will do it, needs back up in drought" - Resident

There was also appreciation from some that having a portfolio of options would also potentially provide a cost saving advantage.

"I agree one single option would probably be horrendously expensive – better to spread it..... balance the cost as well" – SME owner/manager

Initial reactions to the water options included in the portfolios were also mainly positive. In particular there was support for the idea of water conservation and recycled water for non-drinking being always present, and some noted that most of the options that were preferred in the previous forum were included in the portfolios.

"I think they're very good. It seems to cover just about everything....they seem to have focused on the options that people preferred in the previous forum" – Resident

"We should always be conserving water and educating about it" – Resident

Desalination was the main option that gained some negative comments in this respect with some noting that it was included in most of the options despite the fact that it did not rate highly in the preferences from the previous round of forums. Also in this early discussion some also commented that the rainwater tank scheme was only included in one of the options, and this was queried.

"Desalination seemed to be the second bottom on the preference list from last time, so why does it appear in three of these five portfolios?" - Resident

"Why is there only one scheme with rainwater tanks included? - Resident

The themes behind the portfolios appeared to be well understood and helped to distinguish the difference between the portfolios. The notion of transitioning into climate independent options was felt to be a sensible approach given the continued impact of climate change in the future and the growing population of the Central Coast region.

"The traditional transitioning to climate independent solutions sounds sensible and it is not being too ambitious from the get go. It seems sensible to go into climate independent solutions slowly – probably from a cost point of view as they are probably expensive" – Resident

"I think it's worth exploring climate independent options - I particularly like the idea of environmental flow substitution" – Resident

"I think we are seeing climate change, so I like the top two – we are getting less rain every year, so they are less reliant on rain" – Resident

"I like that they have a portfolio that deals with traditional sources. The options in that portfolio look good to me. There is a broad spectrum of options in there" - Resident

At this early stage a few wanted more information about the proportion that each element would contribute, and there were questions asked and clarification required regarding the yield that each option would produce.

"It doesn't give an idea of what percentage each option has in terms of yield" – Resident

Reactions to Portfolios 1 and 2

In the next session, Central Coast Council presented Portfolios 1 and 2 in greater detail. Portfolios 1 and 2 were presented together as they are exactly the same except for a variation in the size of the desalination plant.

Below are the summary charts for the two portfolios which outlined the individual options, strengths and weaknesses, and the traffic light rating for economic impact, social impact and reliability. Green was positive, amber neutral and red a negative impact.

Portfolio 1- Summary \$2.30/kL

Portfolio Incremental option delivery

Climate independent
(staged desalination capacity)

Water conservation

Recycled water
(non-drinking)

EFS/PRW*

Desalination

Capital Cost (\$)	\$6.6M	\$40M	\$205.5M
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Low social impact

Medium environmental impact

Reliable supply

Key Strengths

- Less treated wastewater released to ocean outfall
- All options do not rely on rainfall, which increases the reliability of our supply system
- All options improve the diversity of our water sources and the resilience of our system
- All options are adaptable to be upgraded over time and provide flexibility to respond to a long and severe drought if required

Key Weaknesses

- Medium impacts on natural biodiversity
- High energy use, however, we have included offsets for greenhouse gas emissions for desalination
- Temporary disruption for local residents during construction of pipelines and treatment plants

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3

Portfolio 2- Summary \$2.30/kL

Climate independent
(upfront capacity)

Water conservation

Recycled water
(non-drinking)

EFS/PRW*

Desalination

Capital Cost (\$)	\$6.6M	\$40M	\$230M
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Low social impact

Medium environmental impact

Very reliable supply

Key Strengths relative to Portfolio 1

- Drought contingency capacity is provided when the plant is built so there is less to do in a severe prolonged drought.

Key Weaknesses relative to Portfolio 1

- Higher upfront investment is required to achieve improved drought security before it is needed.

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5

Initial reactions to these two portfolios were quite positive, particularly the inclusion of water conservation, recycled water for non-drinking and environmental flow substitution (EFS)/purified recycled water (PRW). There was appreciation for the positive (green) rating for social impact and reliability, however there were questions and clarification required regarding the reason why the environmental impact was medium (orange).

"The green marks are good - they get my attention and this one and Portfolio 2 have green, especially green for reliability" - Resident.

"I think it's a nice mix – it has long term potential to increase our desal if we need to" –SME Owner/Manager

However, the greatest discussion and debate within the breakout sessions was usually centred around the inclusion of desalination in these two options. Indeed, perceptions of Portfolios 1 and 2 appeared to be dependent upon participants' attitudes toward the inclusion of desalination.

Clearly some were not supportive of building and operating a desalination plant and required greater reassurance and evidence that the impact on the ocean (from the brine water) and the energy use (in building and operating the plant) would not be detrimental. However for some of these people the notion of an environmental offset program helped allay their concerns to some extent, and there were questions and discussion around whether or not solar or other renewable energy sources could be used in the future, which also helped reduce concerns about desalination.

Desalination plants were also perceived to be very expensive to build and operate, with many participants citing the Sydney desalination plant as an example of a high cost resource that is perceived to be rarely used.

"Desal is very expensive but if we use solar it's not too bad" - Resident

"If we don't have a drought we could end up like Sydney and never use it....if we're putting all of this money in we want to make sure that we'll have water for droughts, but we also don't want to end up creating a really big desalination plant if we never need to use it" – Resident

"I'm still not convinced about desal – where in Australia has a desal run cost effectively?.....I've seen them done before where they are expensive and I haven't seen information about how it has improved over time and how it can be switched on and off. So I'd want some more information on this" – SME owner/Manager

"The key weakness is the desal – that's a total weakness. I'm not for building a desal plant at all" - Resident

Having said that, some participants were in support of including a desalination plant in the mix, believing it to be a good element to have because it does not rely on rain, and ocean water is plentiful. These participants were also reassured to some extent by the offset program however further information was needed about the impact of the brine water on the oceans and the biodiversity impacts of a desalination plant.

"Financially I agree with that thinking but my concern is does Council have people working on the environmental impacts? Do they have people doing that and measuring impacts on the natural biodiversity and wildlife and water quality around a desal?" – Resident

"Desal is good because of the reliability aspect - in times of drought it can supply water when it is really needed and nothing else really can" - Resident

The issue of the size of the desalination plant was the key determinant between Portfolios 1 and 2 and it was a general consensus that it would be more worthwhile in the long run for Council to build a larger desalination plant (i.e. 35 ML/day) rather than a 20ML/day plant. Key reasons for support of the larger desalination plant were because the longer-term costs would be similar, and it would cater more to the water demands of the growing population of the region.

"I think it's better to treat it as an investment and go for the bigger desal plant so you can plan for the future while it's cheaper. The infrastructure will probably become more expensive in the future so you might as well build it early on while it's not as expensive" – Resident

"If we acknowledge that we're going to need a desalination plant it would be economical to build the bigger version right from the start" - Resident

"I agree, trying to expand the plant down the track is likely to be a really costly exercise" – Resident

"If I was going to build a plant than I would want it to be big enough that we wouldn't need to change it in the future – build it for the future not just the current" – Resident

Some of the less appealing aspects of these two portfolios were that they did not include rainwater tanks or water sharing with Hunter Water. There was also often confusion, and the need for greater explanation and clarification, regarding why the cost for Portfolios 1 and 2 were similar, despite the size difference. In most of the discussions Central Coast Council staff explained the reason however it was a potential area of confusion.

"I like the traditional approach because it has water tanks and I like the idea of water tanks" - Resident

"I was confused about why the price is the same, even though there is a 50% increase in capacity in Portfolio 2 and the cost is larger" – Resident

There were also frequent questions asked about the yield and what proportion of the total volume of water would be supplied by each option. The estimated long run cost of \$2.30/KL for both portfolios was difficult for participants to understand and comment upon, especially how that would translate to their bills. The long run cost considers not only the upfront cost, but the overall efficiency of the operational phase and the reduced financial impact of investments that are deferred many years into the future, compared to having to spend money upfront.

"I don't know how much desal 20 ML is. It probably is only contributing 30% of our water supply. They are not a good policy going forward, however if the desal was contributing 60-70% of our water supply you may say that is good" - Resident

"What amount of water will these options produce?" – Resident

"If the Portfolios are producing the same amount of water, and Portfolio 2 has a larger desal plant, then does that mean that the other options are producing less under Portfolio 2?" - Resident

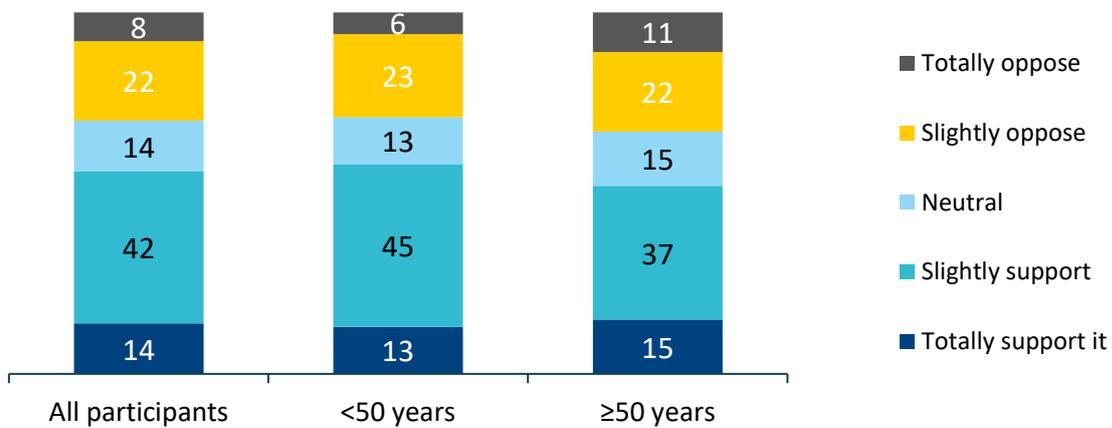
Level of support for Portfolios 1 and 2

Following the discussion of Portfolios 1 and 2, participants were asked to indicate their level of support for each portfolio on a five-point scale - totally support it, slightly support it, neutral, slightly oppose it and totally oppose it.

56% of participants supported Portfolio 1 (that is slightly or totally supported it), with support marginally higher amongst those aged under 50 years (compared to those over 50 years). A further 30% were opposed to this portfolio.

Support was considerably greater for Portfolio 2 with 66% in support of this portfolio (slightly + totally support it). Again, the level of support was slightly higher amongst the younger (under 50 years) participants than the older participants.

Figure 41: Percentage of support for Portfolio 1

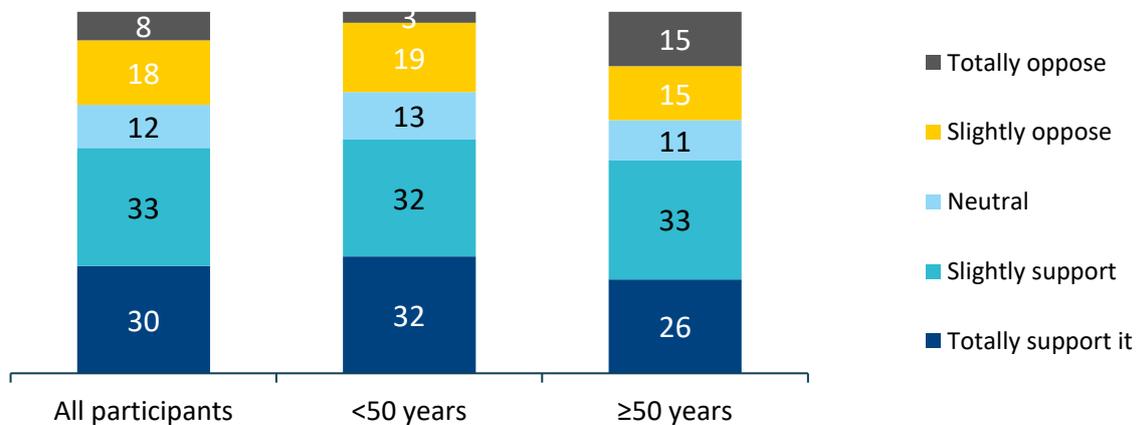


Q. How supportive would you be of Council considering Portfolio 1?

Base: All Round 3 forum and in-depth participants answering the question (n=60); <50 years (n=36); ≥50 years (n=24*)

* Small sample size

Figure 42: Percentage of support for Portfolio 2



Q. How supportive would you be of Council considering Portfolio 2?

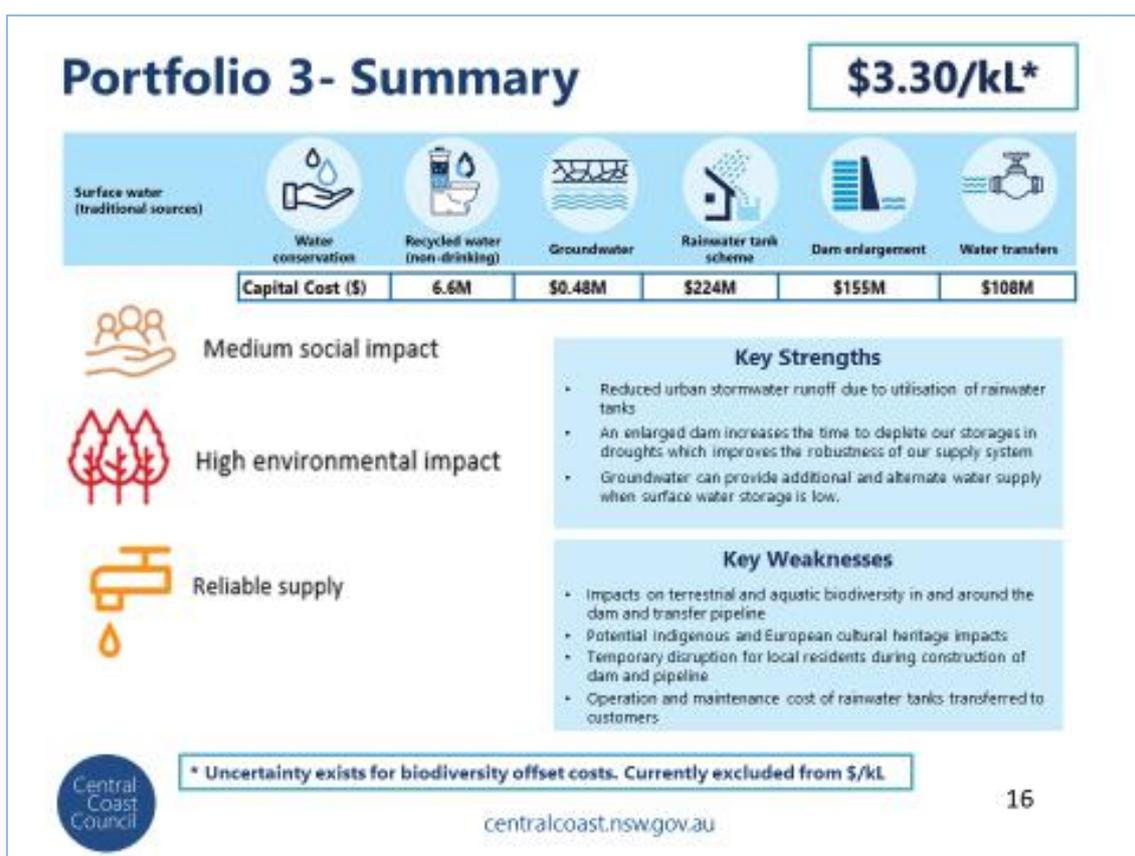
Base: All Round 3 forum and in-depth participants answering the question (n=60); <50 years (n=36); ≥50 years (n=24*)

* Small sample size

Reactions to Portfolio 3

A representative from Central Coast Council presented information on Portfolio 3 – detailing the steps involved, providing further detail on each individual method, outlining the key positives and negatives from the perspective of Council, and providing the comparative cost (per kilolitre over a 40 year period).

Below is the summary chart of the portfolio which was displayed to participants during the discussion session.



While some participants had vocalised a preference for this portfolio during the initial discussion session (when the portfolio concept was introduced), there was considerably less support expressed after they were provided with greater detail (through the presentation from Council). Some expressed their ‘change of heart’ at the outset of this breakout session.

“I thought this was my favourite portfolio at the start but now I see the details, and I don’t think this is the right option now. Just looking at it just doesn’t stack up” – Resident

“My first reaction to this portfolio was that I quite liked it, but I didn’t think the environmental impact would be so high, and the cost is also larger” – Resident

Overall then there was limited support expressed during the forums and in-depth interviews. Looking at the portfolio as a whole, it was seen to be offering more of what was already being done – which some participants did not think would be suitable into the future.

“This portfolio is what we have already - not a change. It is playing on a bad wicket so why would we do this?” - Resident

"I'm not sure that just doing more of the same will get us anywhere. I'm unconvinced by this" - Resident

Specifically, it was seen to offer relatively low reliability, while also resulting in higher level environmental impacts and cost per KI.

"As a portfolio this isn't going to solve our problems. It is still reliant on rainfall" – Resident

"It has lots of disadvantages. You're relying on natural water and it's twice the cost of Portfolios 1 and 2" – SME owner/manager

While most of the negative reaction seemed to result from what Portfolio 3 was seen to offer as a whole, there were specific elements within the portfolio that tended to generate more negative discussion than others. The rainwater tank scheme was one of these. Participants seemed genuinely surprised at the likely cost of the scheme (particularly when compared to the cost of other options like a desalination plant which they had previously considered to be very costly). This then tended to result in discussion around how practical the scheme would be – with questions raised about the longevity of the tanks, and the likelihood of ongoing and appropriate use of them by their individual owners. There were also doubts raised about the yield or contribution rainwater tanks make to the overall water supply, especially during periods of low rainfall. So, while the concept of a rainwater tank scheme may have been relatively well liked, in this context it was not well received.

"I liked the rainwater tank option in the last forums, but now seeing the cost and knowing it doesn't have great reliability makes me think differently. Also, that cost is over a 40-year period, and tanks aren't going to last that long. People go for those plastic options and there's no way they will be intact in 40 years, so they're probably under-estimating the cost there" – Resident

"I am surprised by the cost of the rainwater tanks. 224 mill equates to \$1200 per household so I don't think that calculation is accurate. Why should we subsidise them? People should pay for them, as the tanks save them money in the long run" – SME owner/manager

"My parents have a rainwater tank and they don't use it. People are lazy and they might get them but not use them" - Resident

"People will realise that it costs more for the electricity to run the pump that allows you to make use of the tank water than it does to turn your tap on and use the fresh treated water that flows out. So, they'll stop using them" - Resident

The other component of this portfolio that generated a significant amount of discussion was the increasing of the dam capacity. There were some mixed reactions to this, though tending to be more negative than positive. Some saw this as a sensible option to have in any portfolio, while others were concerned about the potential environmental and social impact it would cause. A few also indicated that the existing dam isn't fully utilised, so they wondered why dam expansion would be needed.

"I don't like the potential impact on indigenous cultures and the environment. We are facing so many issues because we haven't nurtured our environment. I don't know why we would go down this path" - Resident

"My concern here is the dam enlargement. Mangrove Creek Dam opened in the 1980s. They said it would be brimming by the 21st century, but it's never been brimming. The highest point last year was 75%. Any additional capital increase in the capacity might go unfulfilled" - Resident

“If we extend the dam wall, we basically catch the water for nothing, and that lasts for the next hundred years or so” - Resident

There were also questions raised about the environmental impact of the use of groundwater and the need for a desalination plant anyway under this portfolio if there is low rainfall.

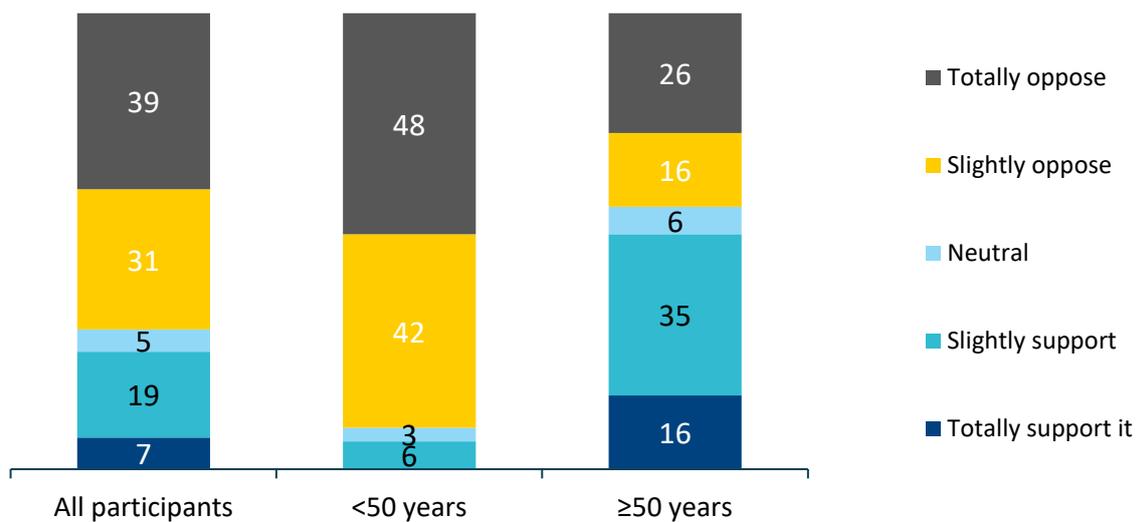
It was noted that this portfolio was more expensive than Portfolios 1 and 2, which was met with some negative comments. However again participants did not know what the impact of the cost would be to Council or on their bills.

Level of support for Portfolio 3

Again, following the discussion of Portfolio 3, participants were asked to indicate their level of support for each portfolio on a five-point scale.

Twenty-six per cent (26%) of participants supported Portfolio 3 (that is slightly or totally supported it), which was relatively low compared to the other portfolios tested. There was a difference by age with support considerably higher amongst the over 50-year-old participants (51%) compared with the younger participants (9%). Overall, however the majority (70%) were opposed to this portfolio.

Figure 43: Percentage of support for Portfolio 3



Q. How supportive would you be of Council considering Portfolio 3?

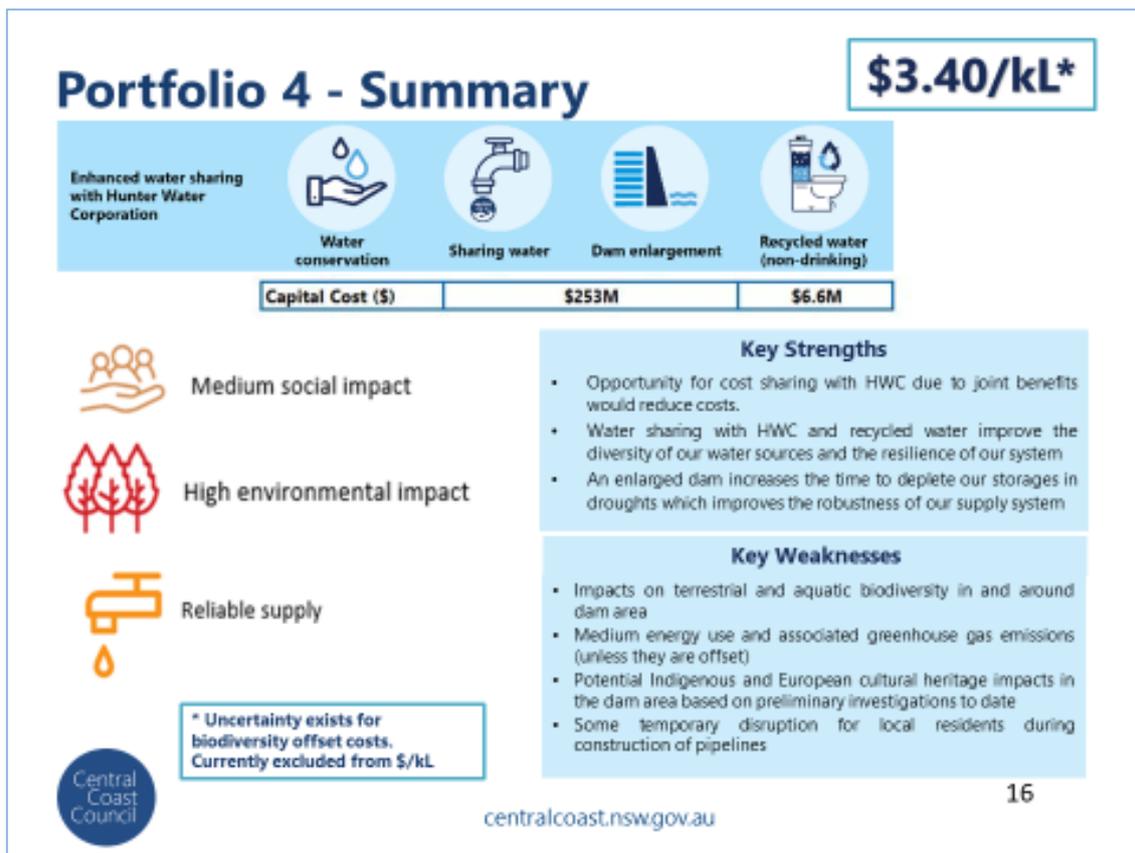
Base: All Round 3 forum and in-depth participants answering the question (n=63); <50 years (n=36); ≥50 years (n=27*)

*Caution small base size

Reactions to Portfolio 4

A representative from Central Coast Council presented information on Portfolio 4 – detailing the steps involved, providing further detail on each individual method, outlining the key positives and negatives from the perspective of Council, and providing the comparative cost (per kilolitre over a 40 year period).

Below is the summary chart displayed to participants during the discussion session.



Overall, the reactions to this portfolio were relatively negative. Some saw the greater level of connectedness with Hunter Water as providing more reliability than the Central Coast would have on its own, but many still interpreted this portfolio as being totally rainfall dependant, and therefore unreliable given climate change and increasing population pressures. There were concerns that if there is a drought then both Central Coast and Hunter regions would be impacted so how water sharing would actually help. It was also more expensive than the other portfolios presented.

“Sharing water provides some level of security. Not being totally self-reliant has to be a good thing” - Resident

“I think sharing the risk with Hunter Water is a good idea. We both can benefit” – Resident

“It would still leave us open to being impacted by drought” – Resident

Again, the raising of the dam wall to enhance the catchment capacity was a common discussion point within the forum break-out discussions and the in-depth interviews. While some liked the idea, there were significant concerns raised in relation to the social and environmental impact of

this particular option, and again, there was uncertainty that the increased capacity would be able to be utilised given that the existing dam doesn't completely fill.

"You still have to potentially damage the European and Indigenous sites and it's not worth paying that price...those heritage sites are very important to protect for future generations" - Resident

"I find it hard to support something with such high environmental impact, and the impact on our heritage" - Resident

"I still have the issue of the dam enlargement and the environmental impact of that. I'm not really in favour of that aspect" - Resident

However, a few who were strongly opposed to the idea of desalination expressed positive reactions to this portfolio.

"I fully support this one. It doesn't have a desal, and it's not subsidising water tanks. I would see this as one that can support the Central Coast for the foreseeable future" - Resident

"If you have a dam that is big enough you wouldn't need desal. There hasn't been the need for desal to date - all we need is a bigger dam. All you need is to look at the figures and make the dam big enough to cover the worst scenario, and this is doing that" - Resident

Whereas others believed that desalination would still be required under this portfolio in the case of a severe drought.

"We will eventually still need desal if we have a long drought - so pretty much every one should include desal. I'm not a fan of it, but what else is there to actually generate water when there's no rain?" - SME owner/manager

The overall price per KI was also commonly referenced. It was assumed that higher cost options were likely to have more impact on their water bills, and that was an important consideration for many.

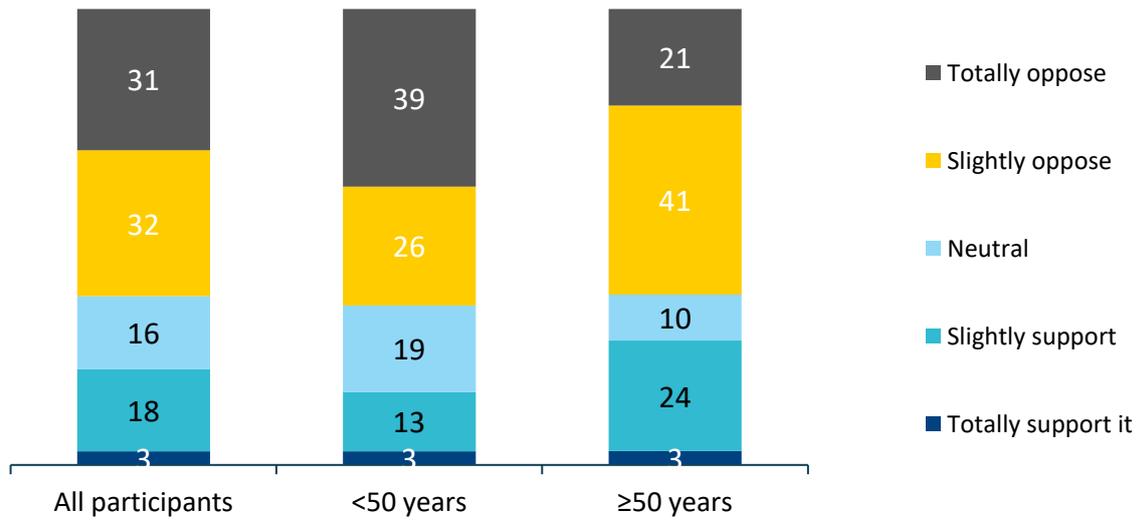
"For its price you don't get as much bang for your buck as you do with Portfolio 2" - Resident

"I kind of like this one, but it's the cost which is problematic for me when you compare it to the other options" - Resident

Level of support for Portfolio 4

When participants were asked to indicate their level of support for Portfolio 4, 21% of participants supported this portfolio, with the majority of this support at the 'slightly support' level. Again, there was a difference by age group with older participants (aged over 50 years) slightly more supportive than younger participants (27% versus 16%).

Figure 44: Percentage of support for Portfolio 4



Q. How supportive would you be of Council considering Portfolio 4?

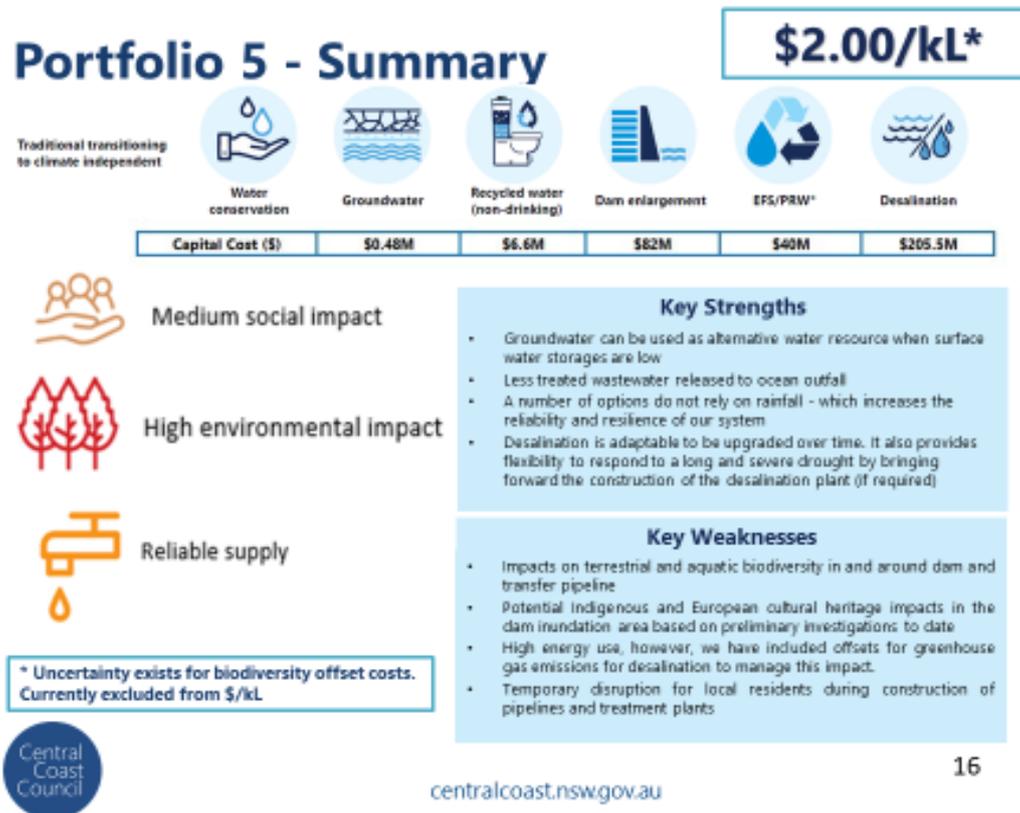
Base: All Round 3 forum and in-depth participants answering the question (n=61); <50 years (n=36); ≥50 years (n=25*)

*Caution small base size

Reactions to Portfolio 5

Portfolio 5 was explained within the forums by a Central Coast Council representative. They detailed the steps involved starting from undertaking water conservations measures, through to implementing an EFS/PRW scheme and the construction of a desalination plant with a 20ML/day.

Below is the summary chart displayed to participants during the discussion session.



This option was regarded positively by participants, as it included the use of many different options, traditional as well as newer solutions to address water sourcing. The main issue that emerged consistently, was the comparatively high environmental impact.

"The price per kilolitre is good, but I don't like the environmental impact" - Resident

"This spreads the options a lot better and the capital cost isn't that great" – SME owner/manager

At a more considered level, participants were very positive toward the \$2.00/kL cost, noting that this was one of the cheaper options. However, it was noted that the costs presented during the forum for dam raising did not include biodiversity offset costs which were noted as being significant (great than \$50M). As mentioned, there were also favourable discussions around the idea of mixing both traditional methods with the more independent water sources as it was seen to be 'hedging our bets' and being prepared for whatever happens in the future.

"This has the traditional methods and the new ones, so it is a mix of both. It is also the cheapest option as well" - Resident

"It's got water conservation, ground water, recycled, dam enlargement, EFS/PRW, and desalination – it seems to have everything, and the cost is probably the lowest" - Resident

The main negatives raised regarding this portfolio were primarily around the environmental impact and some participant's strong opposition to desalination as an option.

Within some of the break out rooms, the ability to offset greenhouse gas emissions and address the impact of the brine output was discussed by Central Coast Council representatives and this seemed to help alleviate some of the concerns with this portfolio, and many of the other portfolios. However, the impact on terrestrial and aquatic biodiversity in and around the dams and the potential Indigenous and European cultural heritage impacts represented significant barrier to some people.

"The irreversible damage to the environment is not worth any price because you can't get that back" - Resident

"If the desal plant is just about covering us and topping us up in the case of a drought then that makes sense to me" - Resident

On the positive side however, some participants appreciated the fact that the desalination plant would be able to be upgraded over time, which allowed it to respond to a long and severe drought. Others argued that if a desalination plant was needed, why not build it now and be prepared, particularly if there was a chance that the price of construction could rise/be more expensive in the future.

"What is the benefit of putting it off? The cost to build it could increase over time. But on the other hand, technology might advance, and the costs of desalination might come down" - Resident

"I like the idea that it could cost less if we delay it - if technology improves" - Resident

"I like the ability for the desal to be upgraded. The ability to upgrade means we don't have to spend the money now" - Resident

There was also some dislike of the use of groundwater due it is unknown impacts on the environment.

"I like these ideas except groundwater - this has massive impacts across the board." - Resident

One or two participants wished to include rainwater tanks in this portfolio as well and suggested that they could even replace some of the options.

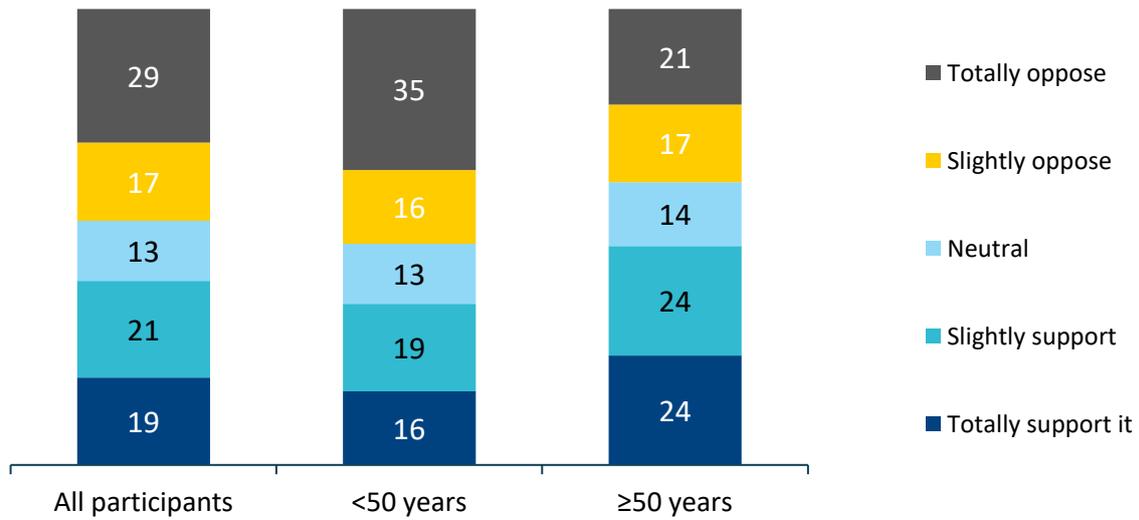
"You could include the water tanks in this. Some sort of subsidising of water tanks would be good" - Resident

"I think they should knock back the dam expansion in favour of water tanks. I think dam expansion is harmful to the environment" - Resident

Level of support for Portfolio 5

The level of support for this portfolio was moderate, with 40% either totally or slightly in support. Opinions varied slightly by age with the older age group showing greater support than their younger counterparts (48% compared to 35% amongst under 50-year olds).

Figure 45: Percentage of support for Portfolio 5



Q. How supportive would you be of Council considering Portfolio 5?

Base: All Round 3 forum and in-depth participants answering the question (n=61); <50 years (n=36); ≥50 years (n=25*)

*Caution small base size

Reaction to two levels of service scenarios

Participants were presented with information on two possible scenarios that had been developed by Council for times of drought.

Under both hypothetical scenarios:

- Existing surface water assets are providing minimum inflows with a storage buffer required to manage seasonal variation and water quality risks.
- Groundwater schemes are providing significantly reduced yields.
- Porters Creek Stormwater Harvesting scheme is recommissioned to capture coastal rainfall runoff from urban catchments.
- Remaining supply is provided by drought response desalination.

The difference between the scenarios was in the amount of water required by desalination.

Under Scenario 1 desalination would provide 35ML/day with a cost to build of \$240 million and a cost to operate of \$25 million/year (full production during emergency drought scenario)

For consumers the assumptions under this Scenario 1 were:

- water efficiency and water restrictions would be implemented and have generated the expected levels of savings
- a total ban on outdoor water using potable water supplies
- residential potable water use is reduced to 125 L/person/day (expectation of 4-minute showers)
- non-residential users reducing overall non-residential consumption by 17% (to around 16 ML/day)
- non-revenue water targets have been met reducing it to around 6 ML/day.

Under Scenario 2 desalination would provide 20ML/day with a cost to build of \$215 million and a cost to operate of \$17 million/year (full production during emergency drought scenario).

For consumers the assumptions under this Scenario 2 were:

- additional water efficiency programs on the top of measures described under Scenario 1 for additional savings
- total ban on outdoor water using potable water supplies
- residential potable water use is reduced to 100 L/person/day (expectation of 3-minute showers, more greywater usage e.g. laundry water or shower water to flush toilets etc)
- non-residential users reducing overall non-residential consumption by 25% (to around 14 ML/day)
- additional pressure reduction and leakage management reduce Non-Revenue Water to below 5 ML/day.

Below are the charts that were presented to participants in the forums and in-depth interviews.

Severe Drought - Levels of Service

Scenario 1- Enduring Drought Supply 68 ML/day	Scenario 2- Enduring Drought Supply 56ML/day
<ul style="list-style-type: none"> Water efficiency and water restrictions implemented and have generated the expected levels of savings Total ban on outdoor water using potable water supplies Residential potable water use is reduced to 125 L/person/day (around 46 ML/day). Expectation of 4 minute showers. Non-Residential users reducing overall non-residential consumption by 17% (to around 16 ML/day) Non-Revenue Water targets have been met reducing it to around 6 ML/day 	<ul style="list-style-type: none"> Assumes additional water efficiency programs on the top of measures described under Scenario 1 for additional savings Total ban on outdoor water using potable water supplies Residential potable water use is reduced to 100 L/person/day (around 37 ML/day). Expectation of 3 minute showers, more greywater usage e.g. laundry water or shower water to flush toilets etc Non-Residential users reducing overall non-residential consumption by 25% (to around 14 ML/day) Additional pressure reduction and leakage management reduce Non-Revenue Water to below 5 ML/day

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Enduring Supply Infrastructure

Scenario 1- Enduring Drought Supply 68 ML/day (125 L/p/d + non-res)	Scenario 2- Enduring Drought Supply 56ML/day (100 L/p/d + non-res)
<ul style="list-style-type: none"> Existing surface water Groundwater schemes <small>Groundwater</small> Porters Creek Stormwater Harvesting scheme <small>Water transfer</small> Drought Response Desalination (35ML/day) <small>Desalination</small> <p style="text-align: center;">Cost to build ~\$240 million</p> <p style="text-align: center;">Cost to operate ~\$25 million/yr (full production during emergency drought scenario)</p>	<ul style="list-style-type: none"> Existing surface water Groundwater schemes <small>Groundwater</small> Porters Creek Stormwater Harvesting scheme <small>Water transfer</small> Drought Response Desalination (20ML/day) <small>Desalination</small> <p style="text-align: center;">Cost to build ~\$215 million</p> <p style="text-align: center;">Cost to operate ~\$17 million/yr (full production during emergency drought scenario)</p>

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Participants were asked to provide their reactions to these scenarios in their breakout groups.

Overall participants stated that they were prepared to adopt the necessary level of water use and restrictions under either scenario if they needed to. However, it was believed that ideally Central Coast Council should prevent the situation getting to this point through other measures such as increasing awareness and providing greater education about water conservation.

"I think when you're in a drought you have to toughen up – it won't be a sudden jump and if we get to this level it's just what you have to do, we have to pull together" – SME owner/manager

"There is going to be drought in the future, so I think educating on conserving water is important. It should be like what they did for sunscreen, a big education program about conserving water" - Resident

It was thought that the restrictions put in place under either scenario would be harder for businesses to manage than residents, as they have stringent health and safety regulations that they must abide by.

"Doing it personally is very different to doing it as a business. There are still WHS guidelines that you have to abide by, not just those businesses that use a lot of water, even offices. You can't get staff members to pour water down the toilet or not flush the toilet, it's hard for businesses to reduce water usage" – SME owner/manager

Some participants suggested that milder restrictions should be brought in earlier in order to decrease the likelihood of getting to the point of severe measures such as 3-minute showers.

"One of my initial thoughts in response to these scenarios is that the restrictions should come in earlier – at 65-70%. There will be more community acceptance then for these options" – Resident

The idea in both scenarios of a target level of usage per person was thought to be problematic as people are not aware of how much water they are using, and it would not be an easy education exercise. There were also concerns about how it was going to be 'policed'.

"If I went out into the street today and interviewed people how many would actually know how much water they use? How do we get that through to the general population?" – Resident

"How can they police that? Can they cut it off from the house?!" - Resident

Having said all this, Scenario 1 was preferred over Scenario 2 for several reasons. Firstly, it was believed that with the expected further growth in population, and uncertainty about climate variation in the future, it is safest to go with the larger desalination option. It was thought that the likelihood of the Central Coast going into a severe drought again sometime in the future is high, so a larger 'safety buffer' through a bigger desalination plant is the better option. The overwhelming sentiment was that if we are going to have to build one anyway, we may as well build a larger one.

"I agree, spend a bit more now. There's a high likelihood of us going into severe drought" – Resident

"We definitely need a bigger desal plant, it would be stupid not to. It's a no brainer" – Resident

"We need to have a system to have more water, and if you're going to build it you might as well make it bigger" – Resident

"The cost will be worthwhile as in the long run we will need desal anyway" – Resident

Secondly it was thought that Scenario 1 is the more realistic option as it would be easier for people to adopt, as it is less severe. It would be more convenient and desirable to have slightly more water available during times of drought, and worth the extra cost.

"Number 1 seems more reasonable and people would adapt to that easier and faster" – Resident

"It may be Ok to live with Number 2 for a while, but if it kept going it would be tough" - Resident

"I prefer scenario 1 over scenario 2 as I am happy to spend a little bit more to have more water available during drought periods" - Resident

What's more, although there was a willingness amongst participants at the forums to abide by any guidelines and restrictions if necessary, there was a lack of trust that 'other' people will actually adopt the harsher measures required in scenario 2, even if they say they will. Therefore, again it was thought that Scenario 1 is the 'safer' option.

"People won't have 3-4 mins showers. They won't change their behaviour" – Resident

"Most people would go along with it, but some certainly wouldn't" - Resident

Even those who weren't as positive toward desalination were generally supportive of Scenario 1 for the reasons above.

"I don't want either of them because they're based on desal. But if you're building it, build it properly and give us the benefit of it. Even though it's costing more, it's providing more" - Resident

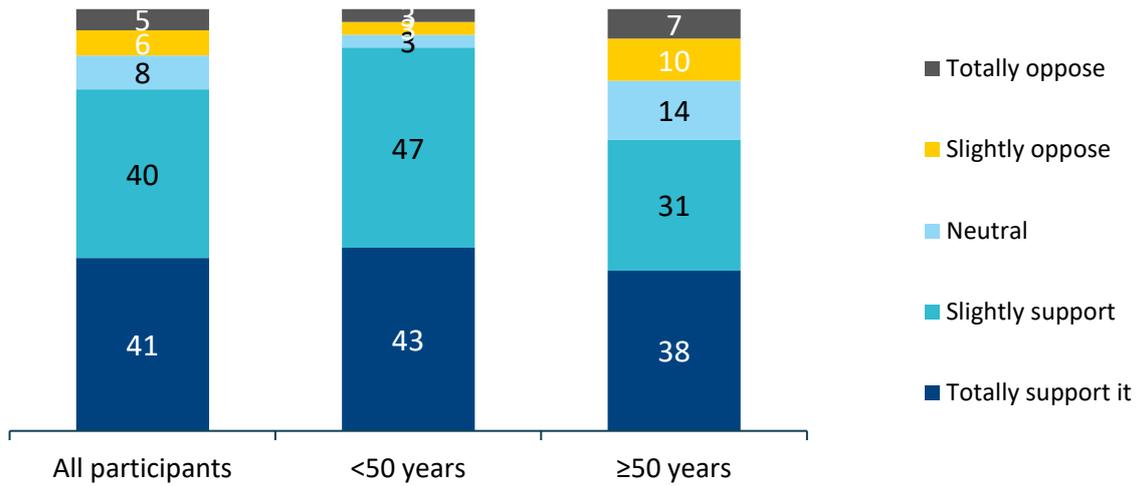
There was a question raised about the cost of the desalination plant in times when it is not required and whether the larger desalination plant in Scenario 1 will cost much more during standby mode than the smaller one in Scenario 2. It was thought that this needed to be considered in the costs.

"My main concern is the overheads when it is not needed. Would the overheads be higher for option 1?" - Resident

The charts below summarise the polling results from this section. Support for Scenario 1 (with the larger desalination plant) was high with 81% in support of this scenario. Support was slightly higher amongst the under 50 years group, compared to the over 50 years. Scenario 2 obtained a lower level of net support (47%) than Scenario 1, reflecting the sentiment that if Council are going to build a desalination plant it is more worthwhile to build a larger capacity plant.

Central Coast Water Security Plan: Consultation Report

Figure 46: Percentage of support for Scenario 1

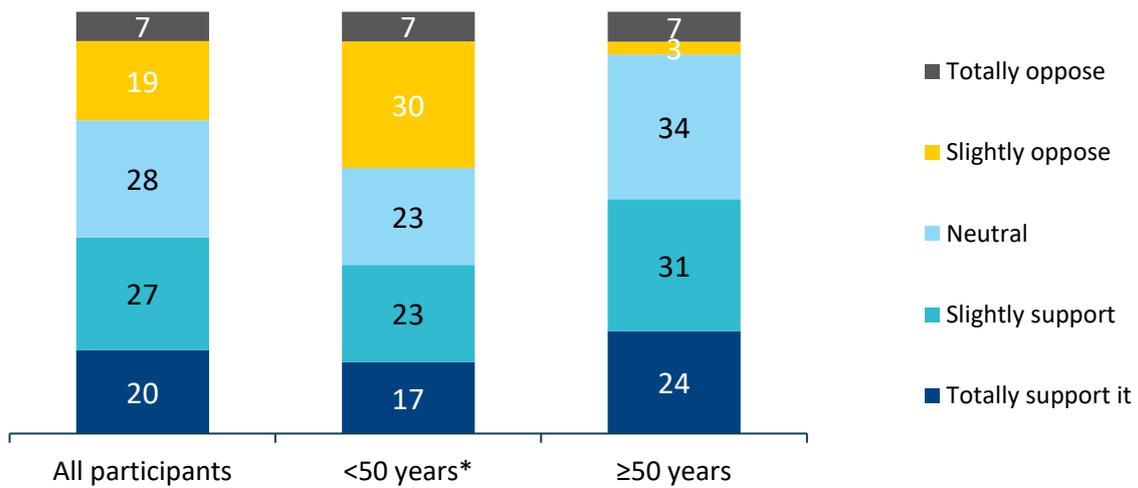


Q. How supportive would you be of Council considering Scenario 1?

Base: All Round 3 forum and in-depth participants answering the question (n=60); <50 years (n=35); ≥50 years (n=25*)

*Caution small base size

Figure 47: Percentage of support for Scenario 2



Q. How supportive would you be of Council considering Scenario 2?

Base: All Round 3 forum and in-depth participants answering the question (n=60); <50 years (n=35); ≥50 years (n=25*)

*Caution small base size

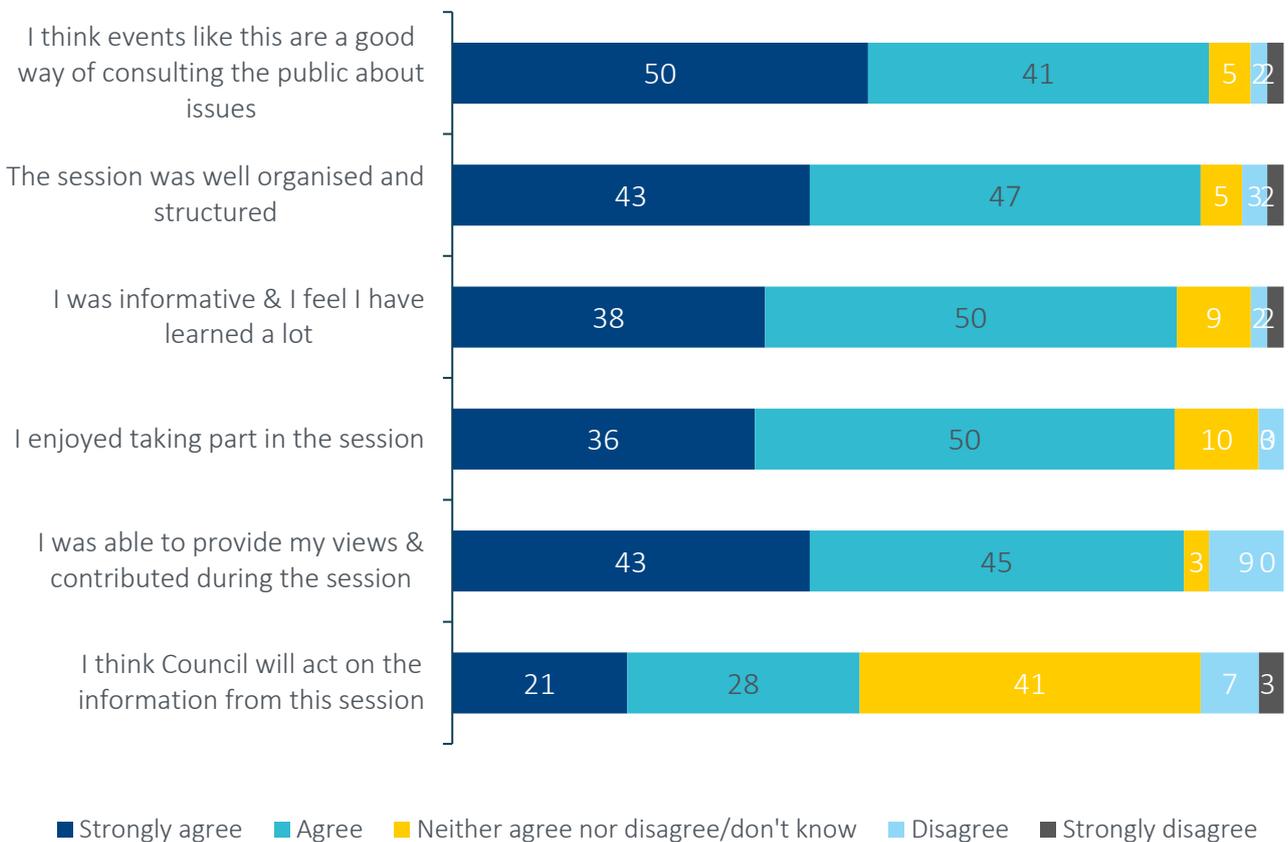
Satisfaction with the engagement

As we did in the first and second rounds of engagement, following the forums participants were emailed a short questionnaire asking them to indicate their level of agreement with a series of statements regarding the forums.

As shown below, most participants agreed that events like this are a good way of consulting the public about issues and that the session was well organised (91% and 90% respectively strongly or slightly agreed).

A further 88% agreed that it was informative and that they have learned a lot, and 86% indicated that they enjoyed taking part in the session. There was lower agreement that they think Council will act on the information from the session (49%).

Figure 48: Percentage of satisfaction with the engagement



Please indicate your level of agreement with the following statements...
 Base: All forum 3 participants who answered this question (n=69)

4.5 Method 5 – Water portfolios opt in survey

To build awareness of this project we also had a survey available online from 19 April to 2 May 2021.

The survey asked participants to review the information on the Your Voice Our Coast project page about each of the five portfolios of water supply and demand options – as no one option works in isolation – before completing the survey.

In total 98 people completed this survey.

A copy of the survey [can be found here](#).

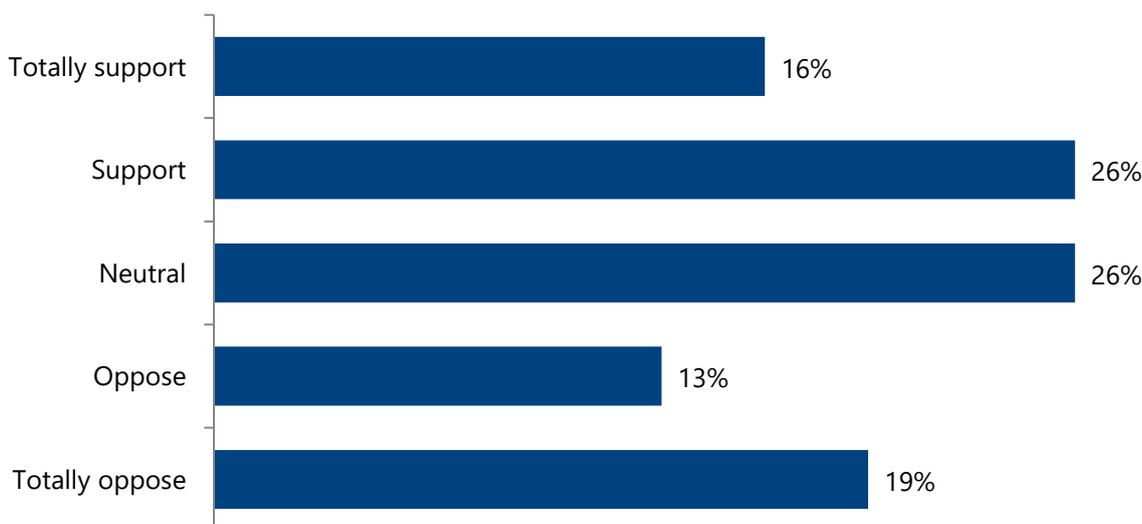
A note about sampling bias: This online survey was 'opt-in', which means participants proactively sought to complete the surveys as opposed to a sample or respondents being selected to more accurately reflect and represent the population makeup of the Central Coast community.

For this survey, 80% of respondents were over the age of 50.

Water portfolios

4.5.1.1 Portfolio 1

Figure 49: Percentage of support for Portfolio 1



Respondents: 98

Participants were then asked to add any additional thoughts they had on Portfolio 1 into a text box. This was not mandatory – 35 participants added their thoughts.

Below is a sample of these comments:

I am in support of expansion of dams and recycled water that isn't for consumption.

This approach seems feasible, the Central Coast residents are proven to be excellent at water conservation.

Have reservations about pumping recycled water into the river and potential for polluting the environment. If the water has been purified why can't it be used directly for drinking water, successful in other countries. Think desal; a high energy user, should be the last resort unless it can be fully run on solar or wind.

Climate change is paramount for my children and grand-children's future. Energy used by desalination must be from renewable sources. I am suspicious of "offsets for greenhouse gas emissions".

Desalination would be good for water security if the carbon output from energy could be reduced and the brine impact reduced.

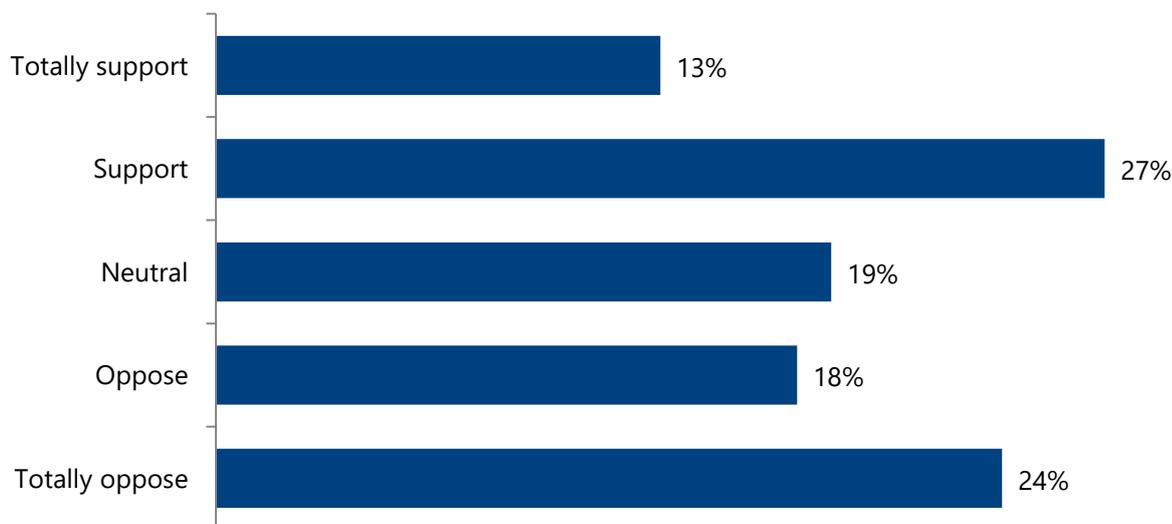
Adjust water heating appliances so that several litres of water are not wasted waiting for hot water to reach the taps.

Too much focus on an engineering solution instead of changed consumer behaviour.

All questions, concerns and feedback have been addressed by Council in Section 5 – Council's response.

4.5.1.2 Portfolio 2

Figure 50: Percentage of support for Portfolio 2



Respondents: 98

Participants were then asked to add any additional thoughts they had on Portfolio 2 into a text box. This was not mandatory – 27 participants added their thoughts.

Below is a sample of these comments:

Rainwater tanks should have been included as an option, why was that option excluded?

I'm totally opposed to desalination due to environmental concerns and cost. The rest of the portfolio is fine.

Increasing the desalination output makes sense if another serious drought is in play and we don't have access to the water sharing from the hunter which also comes at a cost.so why not just create the desal plant.

Gives greater certainty.

Better than option 1.

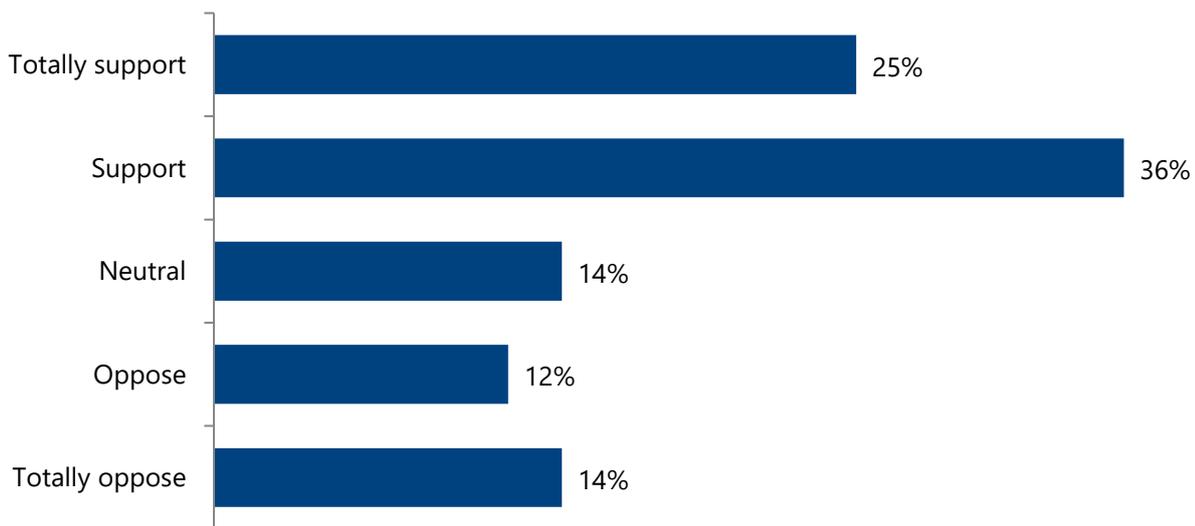
Not interested in drinking PRW.

I am concerned about the high energy use. Green energy should be used to power it. Can we afford it?

All questions, concerns and feedback have been addressed by Council in Section 5 – Council's response.

4.5.1.3 Portfolio 3

Figure 51: Percentage of support for Portfolio 3



Respondents: 98

Participants were then asked to add any additional thoughts they had on Portfolio 3 into a text box. This was not mandatory – 31 participants added their thoughts.

Below is a sample of these comments:

This looks to be a sensible approach; I do have some concern over ground water extraction on a mass scale

Building or enlarging dams and water transfers are not the answer.

Recycling water for drinking should be included.

Support the use of recycled water. More analysis required to be provided on the water conservation and rainwater scheme. What is the current level of rainwater tank utilisation?

Use of and levels of groundwater will need to be carefully monitored

I agree with recycled water and rainwater tank scheme but do not think water should be taken from groundwater and don't think the dam should be enlarged.

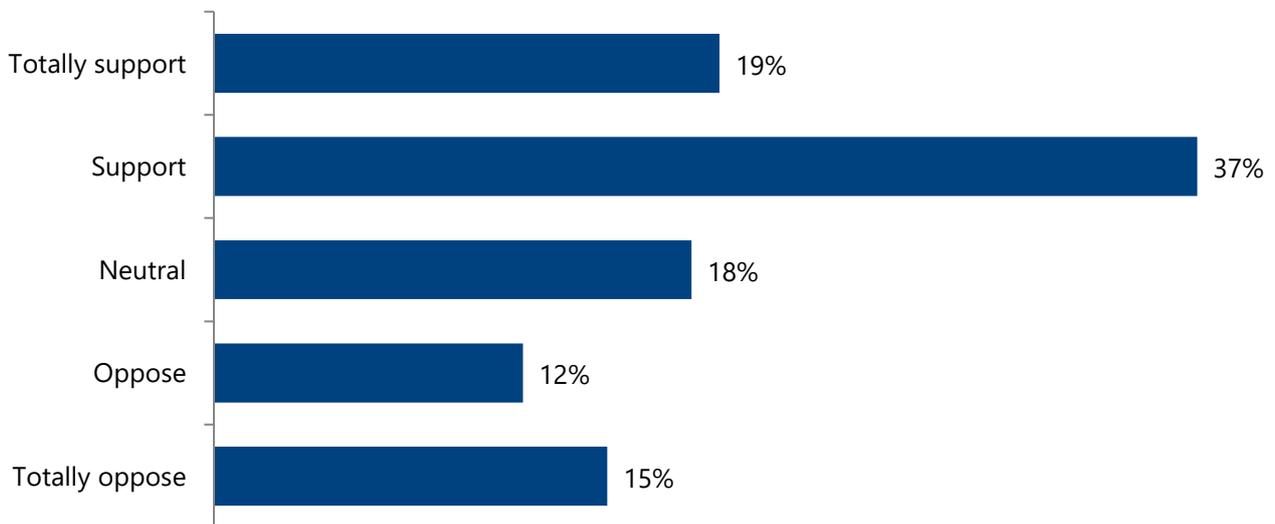
Not a huge fan of relying on dam enlargement particularly from an environmental impact perspective. I also think talking about bigger dams might take away from the need to be more careful about how we use water. I would also want to know more about potential impacts of groundwater extraction, particularly on water dependant ecosystems like sandstone hanging swamps. Totally supportive of the other options in this portfolio. Notwithstanding, if there is a good case for dam enlargement and groundwater extraction and suitable offsets and mitigation measures for impacts, I could support this portfolio.

Would rainwater tank scheme be safe? Conservationists wouldn't like bigger dams but a reasonable option. Water transfers worked well with the Hunter.

All questions, concerns and feedback have been addressed by Council in Section 5 – Council’s response.

4.5.1.4 Portfolio 4

Figure 52: Percentage of support for Portfolio 4



Respondents: 98

Participants were then asked to add any additional thoughts they had on Portfolio 4 into a text box. This was not mandatory – 26 participants added their thoughts.

Below is a sample of these comments:

This mix works in many parts of the world.

We should have recycled water prior to dam enlargement but definitely have water sharing with Newcastle.

I would also support Environmental flow substitution as part of this portfolio this may be more environmentally friend than dam enlargement. I do not totally agree with the way you have constructed each portfolio.

Support water conservation. Sharing water with Hunter makes sense. Dam enlargement: Need to understand the environmental and social impacts of dams. If the damage is irreparable to Aboriginal sites for example, this should not be done.

I concur with recycled water so long as it does not add to greenhouse gas emissions through more energy use.

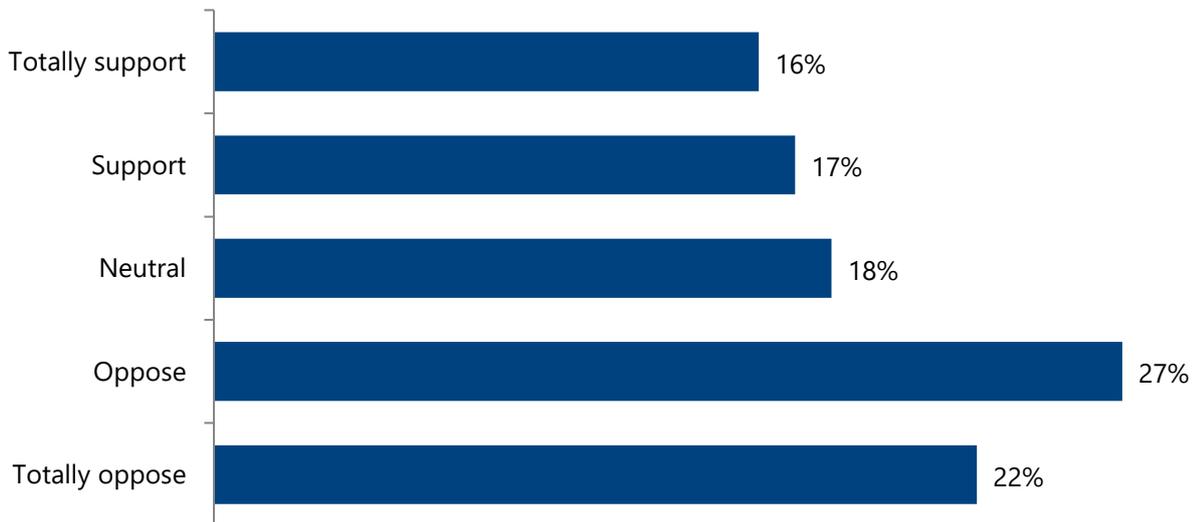
hunter water corporation also rely on surface water for collection and storage, it is therefore not wise to enhance water sharing with HWC as climate change continues to create unreliable inconsistent rainfall.

I oppose dam enlargement but support the other options included.

All questions, concerns and feedback have been addressed by Council in Section 5 – Council’s response.

4.5.1.5 Portfolio 5

Figure 53: Percentage of support for Portfolio 5



Respondents: 98

Participants were then asked to add any additional thoughts they had on Portfolio 5 into a text box. This was not mandatory – 24 participants added their thoughts.

Below is a sample of these comments:

No more water taken from ground water and no dam enlargement - should have water sharing.

I would support this proposal provided that it planned but delayed awarding any contracts for constructing the desalination plant and its whole support infrastructure to a later date when the energy & commercial osmosis technology matured and became cost-effective with reduced maintenance construction cost.

Not enough information on how much groundwater supplies will contribute to the severe drought scenario.

Good level of water sustenance, yet bad as too much environmental impact across a dam increase, groundwater and desalination. This option could be fully supported if there was no dam option.

I'm totally opposed to desalination due to environmental concerns and cost. The rest of the portfolio is fine.

This is a good option, but it excludes the Hunter link, which I also support.

Purified water recycling is fundamentally acceptable, but the energy use is of great concern.

This solution carries lower environmental impacts than the previous portfolios.

This includes recycling of water for non-drinking purposes - could it be extended to use recycled water for drinking?

All questions, concerns and feedback have been addressed by Council in Section 5 – Council's response.

Water security and severe droughts

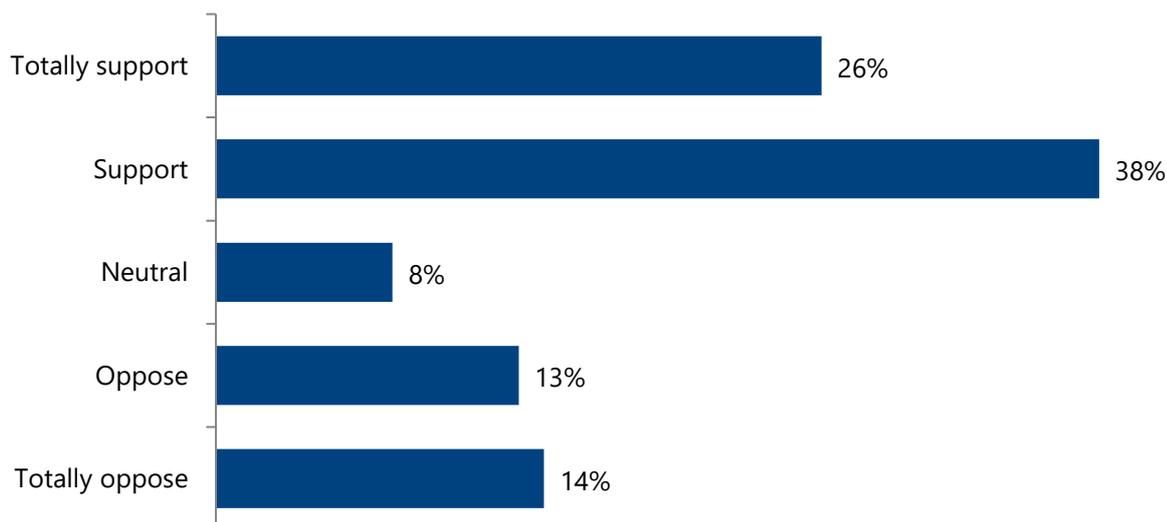
In a very long and severe drought (longer than any local drought in our lifetimes) that causes our water storage to fully deplete, our current drought plan can provide an ongoing water supply equivalent to 100 litres per person per day, for residential customers.

For comparison, our residential customers were able to restrict their usage to approximately 160 litres per person per day during the peak of the millennium drought, and our water wise target is 150 litres per person per day.

The chance of actually needing to reduce our water usage to such low levels is fairly small - however we wanted to gauge community support for this, during a prolonged and extreme drought.

4.5.1.6 125 litres per person per day

Figure 54: Percentage of support for 125 litres per person per day



Respondents: 91

Participants were then asked to add any additional thoughts on reducing their water use to 125 litres of water per person per day during a severe and ongoing drought. This was not mandatory – 26 participants added their thoughts.

Below is a sample of these comments:

I believe the scope of any restriction plan should include water that is used for irrigation by agribusiness and water used by businesses.

It's a no brainer however will need to consider how it is enforced. Lots of people seem to shirk their responsibility during the last drought. Couple with a water tank rebate that could include necessary plumbing to house, pumps etc rather than just tanks (not that tanks are any good if there is an extended period of very low rainfall).

People waste way too much water, I would have no problem with 125l/day, I do not use that now.

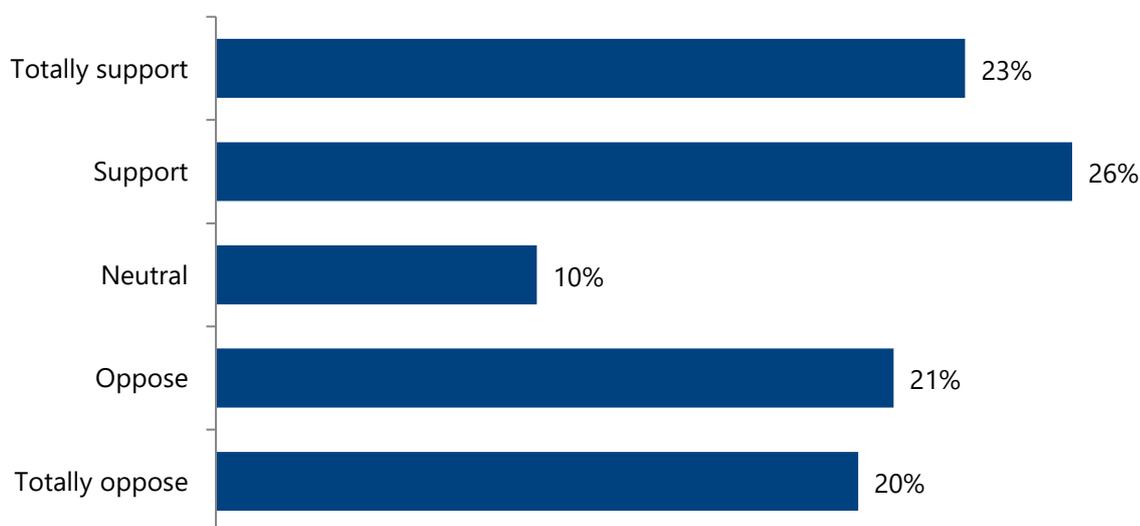
Will there be any incentives to encourage people to reuse grey water in toilet cisterns or install more water tanks on their property?

Outside water use - I have reused grey water in the past for outside use and this should be included. That is capturing sink, shower & clothes washer water for use outside.

All questions, concerns and feedback have been addressed by Council in Section 5 – Council’s response.

4.5.1.7 100 litres per person per day

Figure 55: Percentage of support for 100 litres per person per day



Respondents: 91

Participants were then asked to add any additional thoughts on reducing their water use to 100 litres of water per person per day during a severe and ongoing drought. This was not mandatory – 23 participants added their thoughts.

Below is a sample of these comments:

We are a household of 5 people and without trying at all use approx. 400L per day so around 80L per person per day. This is without limiting showers (although have a water-saving showerhead), washing most days, kids have baths, have a 5000L rainwater tank for outside use such as garden and pets and flushing 1 of our toilets. If the tank is low, we switch back to mains water for the toilet. We have been down to about 300L per day and that included washing of nappies every second or third day. Restricting water use to 100L pp per day or even 150L pp per day should be all the time even if we don't have a drought. This is a much more cost-effective option than some of the other options presented.

100 Lt per person per day very much achievable as long as it does not cause an increase in financial costs on water rates because of the any reduced revenue.

Clearly, I would support if necessary.

It may be difficult to enforce, especially for visitors.

I hope we don't get to that point.

I have in the past used grey water on my plants and for flushing the toilet - no problem. Where I would see a problem is washing less frequently and using grey water in the washing machine.

But people would need help to understand how to save water in this way, e.g. how to divert water from shower to use in toilets. Low income households may need financial assistance to implement.

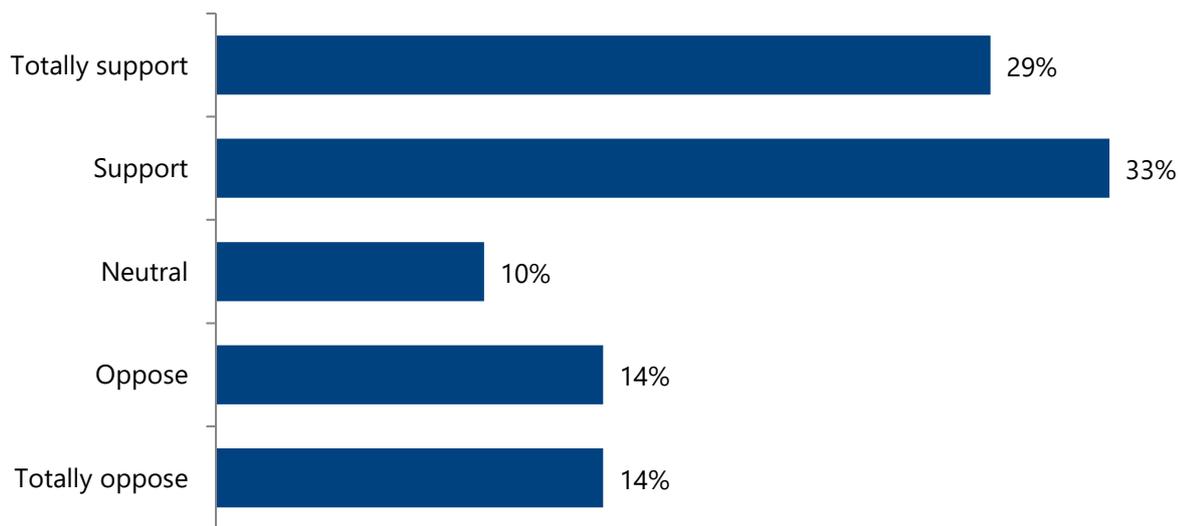
All questions, concerns and feedback have been addressed by Council in **Section 5 – Council's response.**

Reducing our carbon footprint

The community has told us that environmental sustainability is important to them. We have therefore included measures to reduce the carbon footprint for high energy options such as desalination in our preliminary portfolios through the purchase of renewable energy. Below are the support levels for this approach.

4.5.1.8 Supporting the approach to reduce our carbon footprint

Figure 56: Percentage of support to reduce our carbon footprint



Respondents: 91

Participants were then asked to add any additional thoughts on reducing the carbon footprint of high energy options through purchasing renewable energy. This was not mandatory – 30 participants added their thoughts.

Below is a sample of these comments:

I am opposed to Hydro schemes that require building of new dams. I think we should focus on solar schemes that have less environmental footprint

Reliable low operating cost water is my highest priority. If Reduced carbon impacts on this, then I am opposed

It is essential that we reduce our carbon footprint in every way we can.

I'm not opposed to fossil fuels if that's what needed for desalination.

Reducing our carbon footprint should be paramount. The future of our children and grandchildren is so dependent on the reduction of greenhouse gas emissions.

All questions, concerns and feedback have been addressed by Council in Section 5 – Council's response.

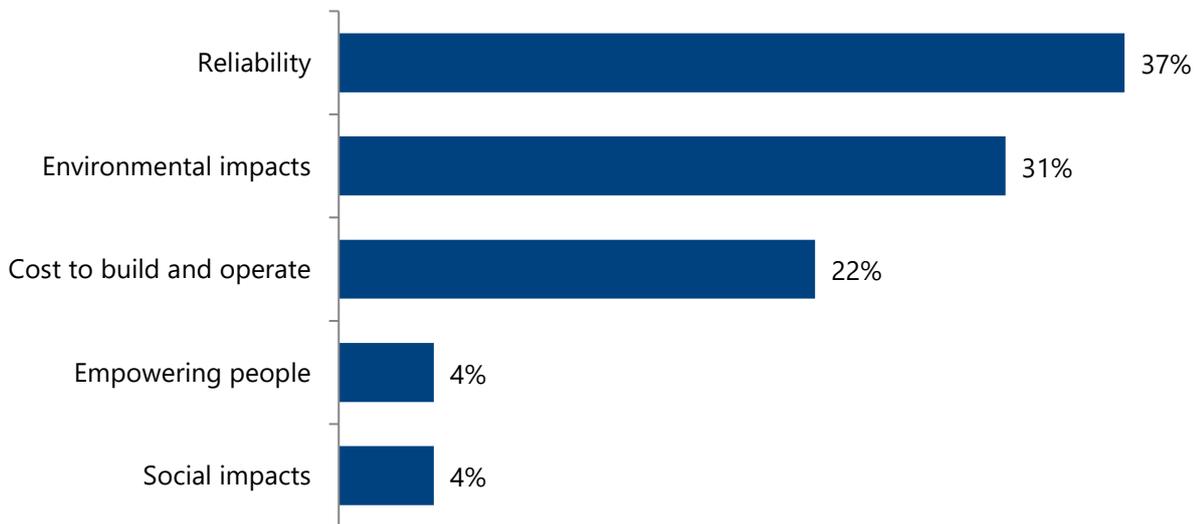
Values

We asked participants to rank the following values in terms of how they influenced their rating when considering their level of support for the portfolios:

- Reliability
- Environmental impacts
- Cost to build and operate
- Empowering people
- Social impacts

They were asked to rank the values from 1 to 5, with one being the most important to them, and 5 people the least important. The below figure shows the ranking of those people ranked as number 1.

Figure 57: Percentage of values ranked at number 1



5 Council's response

Due to the large volume and variety of content contained within community feedback, not every issue or theme was able to be included and responded to in the following table, however all feedback has been read and will be considered by the project team.

Please note that these are responses to the issues raised through the two opt-in surveys only. Any issues that were raised in the deliberative forums were responded to on the evening.

Water supply and demand options

Theme	Summary of theme / Example of comment	Council's response
Conservation of water	Suggestion that Council tests their pipes for leakage – in both domestic and commercial taps	<p>Council is currently running an active network leakage detection and rectification program. The scale of the program is reassessed each year.</p> <p>Since 2020, our active leak detection program has inspected over 1,200 kilometres of watermain and has identified around 900 million litres of water losses in the distribution system.</p>
	Suggestion that residents recycle stormwater runoff from roofs for heavy uses such as washing clothes.	<p>Development application and BASIX policies for new dwellings require rainwater tanks be installed to encourage stormwater reuse – these are typically connected to the internal plumbing of the dwelling for toilet flushing and laundry washing, as well as outdoor uses.</p> <p>Council has developed a rainwater tanks maintenance guide to ensure residents are catching water effectively, and maintain its quality.</p> <p>A Council subsidised rainwater tank scheme is also one of the ten options we shortlisted when developing our CCWSP, to encourage existing dwellings to invest in rainwater tanks.</p> <p>There are also three Council-owned stormwater harvesting sites (Central Coast Stadium, Hylton Moore Park and Terrigal Reuse scheme) as well as several privately owned stormwater harvesting sites on the Central Coast.</p>
	Suggestion that Council restricts residents from using	During our consultation on the CCWSP, we learnt that the majority of the represented community (57%)

	<p>sprinklers on their gardens.</p>	<p>would accept permanent outdoor watering times to be restricted to before 10am and after 4pm.</p> <p>A further 29% were accepting of this early in the drought, and another 13% during mid-drought.</p> <p>When not in restrictions, watering, including with sprinklers and irrigation systems, is permitted before 10:00am and after 4:00pm to avoid heat of the day.</p>
	<p>Suggestion for more community education regarding saving and reusing water.</p>	<p>Council currently runs a host of education programs around water conservation.</p> <p>Love water, use it wisely – this is the theme of our water education program, which commenced in April 2019. This program provides resources to increase water literacy on the Central Coast while developing a new digital footprint where the public can interact, explore, and have fun while learning all about water.</p> <p>Some of the new resources developed have been implemented into the geography syllabus at local schools to introduce or reinforce water conservation concepts. Notable resources that were developed include:</p> <ul style="list-style-type: none"> • our Love Water website • an online water supply game: Working with Water • educational resources for primary and high school classes • repair and maintenance guides • a 360 virtual tour of two storage dams on the Central Coast • a small business water education program • a Central Coast water supply system animation • an optional installation of free smart water data loggers for two months – where Council can monitor the school’s water usage • Dr. Hydro Incursion at early childhood centres • water education packs at 130+ early childhood centres
	<p>Suggestion for the introduction of incentives for water conservation in community households and</p>	<p>Council currently promotes the use of 150 litres of water per person per day for residents. We also include the average daily water usage with each meter bill sent to residents.</p>

	<p>businesses – e.g. fees and fines for mismanaging water and exceeding reasonable usage limits.</p>	<p>Council can issue penalty notices during periods of water restrictions.</p>
	<p>Suggestion to adjust water heating appliances so that several litres of water are not wasted waiting for hot water to reach the taps.</p>	<p>Reducing the time it takes water to travel from the hot water system to where it is being used (e.g. shower, sink and washing machine) is site specific, and not covered under BASIX guidelines.</p> <p>However, residents could collect the cold water in small buckets and use for other purposes.</p>
<p>Dams</p>	<p>Concern that Mangrove Creek Dam was built in the wrong place</p>	<p>Mangrove Creek Dam was built due to a rising demand for water from an expanding population. The dam was built to boost water supply storage for the Central Coast and to help provide a more reliable water supply.</p> <p>Mangrove Creek Dam offered several advantages as a site for the region’s major dam. The dam site was determined by the NSW Department of Public Works in the 1970’s after extensive investigation. The decision was based on several environmental, physical and financial considerations including:</p> <ul style="list-style-type: none"> • dam size: For a dam this size the site is the closest possible location to the coastal areas where most people live • catchment: The land comprises extensive undeveloped, uninhabited land which helps to maintain a pristine catchment area • geology: The site has a rock foundation. Areas with a sandy base are not suitable for dam construction. The naturally V-shaped valley is the ideal storage with a small surface area compared to volume – which means less surface evaporation • future water supply works: The dam site is located relatively close to all other water catchments – which minimises the costs associated with transfer pipelines and pumping stations <p>Mangrove Creek Dam was proposed as a large storage dam, not primarily a collection dam. Its catchment area was relatively small, but the shape of the valley and its</p>

	geology enabled the construction of an 80-metre-high wall that would store 190,000 million litres of water.
Concern that Mangrove Creek Dam is porous above the 60% capacity level and the dam doesn't retain water above this level.	Council monitors seepage at Mangrove Creek Dam and this is not a concern for water security or the safety of Mangrove Creek Dam.
Concern around dam enlargements as dams are recognised by the United Nations as being outmoded solutions reliant on large scale habitat destruction/ alteration.	When assessing enlarging Mangrove Creek Dam and comparing it to the other options on the table, Council included an assessment of the impacts to biodiversity and heritage.
Concern around damage to Aboriginal sites when building or enlarging dams.	When assessing enlarging Mangrove Creek Dam and comparing it to the other options on the table, Council included an assessment of the impacts to biodiversity and heritage.
Concern that talking about enlarging dams might take away from the need to be more careful about how we use water.	We have taken an 'all options on the table' approach and considered a mixture of supply side and demand side measures to meet the future needs of the community. No single option can effectively manage our future needs and a portfolio of options is required.
Concern that the 1:100-year floods in the region only increase the stored volume by less than 10%, thus increasing capacity the dam will never fill as the catchment area does not support the dam.	Council has considered a range of potential long-term rainfall and runoff scenarios when considering the likely performance of each of the shortlisted options. This analysis was undertaken in line with current and emerging best practice and allows Council to understand the risks associated with each of the options. Long term modelling indicates that Mangrove Creek Dam can fill, now with Council's ability to transfer water from the Wyong River and Ourimbah Creek Catchments to the dam via the Mardi to Mangrove Pipeline.

	<p>Concern that raising the dam wall would be a future flood hazard (i.e. too much rainfall puts pressure on the wall, which necessitates water to be released during a downpour adding to natural run off and possibly exacerbating any flooding issues).</p>	<p>All of Council’s existing dams, and any new dam would be designed and operated to ensure the safety of community’s downstream.</p>
	<p>Suggestion to increase the size of the dam, and replace any failing pipes</p>	<p>We have taken an ‘all options on the table’ approach and considered a mixture of supply side and demand side measures to meet the future needs of the community.</p> <p>No single option can effectively manage our future needs and a portfolio of options is required.</p>
	<p>Suggestion to build more dams and place them in areas where they will be most effective.</p>	<p>Council considered the merits of constructing new dams compared to raising Mangrove Creek Dam.</p> <p>The raising of Mangrove Creek Dam would be more effective compared to a new dam due to limited suitable locations, the high cost and environmental impact of new dams as well as the ability to transfer water from the Wyong River and Ourimbah Creek Catchments into Mangrove Creek Dam.</p>
	<p>Suggestion that it would be more cost effective to pump water to Mangrove Dam than to build a desalination plant.</p>	<p>We have taken an ‘all options on the table’ approach and considered a mixture of supply side and demand side measures to meet the future needs of the community.</p> <p>No single option can effectively manage our future needs and a portfolio of options is required.</p>
	<p>Suggestion to expand Mardi Dam and Mooney Mooney Dam</p>	<p>While Mangrove Creek Dam was constructed with future raising in mind, it is not a cost-effective option to enlarge Mardi Dam and Mooney Mooney Dam.</p>
	<p>Suggestion to build mitigation dams which could be used to capture water in times of flooding and</p>	<p>Council considered the merits of constructing new dams compared to raising Mangrove Creek Dam.</p> <p>The raising of Mangrove Creek Dam would be more effective compared to a new dam due to limited suitable locations, the high cost and environmental impact of new dams as well as the ability to transfer</p>

	<p>feed storage dams later.</p>	<p>water from the Wyong River and Ourimbah Creek Catchments into Mangrove Creek Dam.</p>
	<p>Suggestion that Council either has the current dam generate power, or build new dams to generate power, offsetting the cost of power by selling back their excess daytime power – and be paid for pumping water to Mangrove Dam.</p> <p>In addition, mini hydro generators could be installed to capture the energy when water is fed back to Mardi.</p>	<p>Council considered this at the time of constructing the Mardi to Mangrove Pipeline. At that time, it was not considered to be cost effective, however Council will reassess these opportunities as circumstances change.</p> <p>Additionally, power companies do not pay customers to use energy during peak hours of power availability.</p>
	<p>Suggestion to switch on Mangrove Mountain pumping station when it rains, or pump water from Wyong River, so the dam is kept near 100% capacity</p>	<p>Council operates the water supply scheme to provide the required level of water security and reliability, at an efficient cost to the community.</p> <p>Council has recently resolved a dam safety constraint that was limiting Mangrove Creek Dam from filling up higher than 80%. Now that it is resolved, it will allow improvements to water security and reliability.</p>
	<p>Question about the old railway dams – what are they being used for and can they be connected to the water supply?</p>	<p>Council hasn't investigated this option in detail for the current plan. It is understood there are constraints with these sites including heritage listings, their scale and location that would make them unsuitable to integrate into the supply scheme.</p>
	<p>Question on Mangrove Dam's capacity – can it provide enough water for any drought if it is kept close to full?</p>	<p>The dam capacity is a known limit, whereas the length and severity of future droughts is unknown. If the dam is near full at the start of drought sequence, it has enough capacity to cater to short term droughts.</p> <p>However, emerging research suggests that 'mega droughts' spanning decades have occurred in the region's history. Council's ability to fill and draw down Mangrove Creek Dam is dependent on rainfall patterns that are subject to uncertainty.</p>

	<p>Question – the dam was built as a storage dam to be supported by an additional catchment feeder dam; however, this was never built. Will it be built?</p>	<p>This was built in the last drought as part of the Mardi to Mangrove pipeline which provides water from Wyong River and Ourimbah Creek catchments in addition to dam’s own catchment.</p>
Desalination	<p>Concerns around the aesthetic quality of a desalination plant for the coastal environment.</p>	<p>The desalination plant will be constructed on Council owned land adjacent to the existing Toukley STP (off Wilfred Barrett Drive). It is anticipated that plant will not be able to be seen from the road.</p>
	<p>Concerns regarding financial impacts</p>	<p>Desalination plants have high upfront costs related to membrane treatment and power infrastructure. Ongoing operational costs are also relatively high due to high energy use.</p> <p>However, additional water sources introduced as part of managing a severe drought need to be highly reliable and independent of rainfall to provide the required volume of drinking water. Desalination is the preferred technology to meet these outcomes for coastal communities across Australia.</p>
	<p>Concerns regarding environmental impacts</p>	<p>Council places a high priority on minimising any environmental impacts - both on land and in the water.</p> <p>Additional environmental assessments will be undertaken as part of the revised direct ocean intake works, which includes various marine studies and land-based assessments which together will form part of the updated Environmental Impact Statement (EIS) documentation.</p>
	<p>Concerns regarding energy use</p>	<p>Desalination does use more energy than sourcing water using traditional methods, such as gravity feeding water out of a dam.</p> <p>We should remember that desalinated water is not reliant on rainfall so in a prolonged drought it would be our emergency measure.</p> <p>It takes approximately the same amount of power to run a modern fridge for one day as it does to produce enough desalinated water for the daily use of a family of four.</p>

	<p>Concerns regarding cost to run, even when not in use</p>	<p>Council considers the long-term costs to operate a potential desalination plant at full capacity as well as the times required to run the plant at reduced capacity or in standby.</p> <p>These costs are considered when assessing the financial performance of different options under the plan. Detailed investigations would be undertaken to optimise the overall cost of any future desalination plant.</p>
	<p>Concern that even with carbon offsets it is increasing the carbon footprint rather decreasing.</p>	<p>Council would seek to obtain 100% carbon offsetting of energy for the ongoing operation.</p>
	<p>Concern that the desalination plant would need to be completely replaced due to wear and tear in 40 years – unless it operates at very low capacity or not at all for long periods.</p>	<p>Every supply option has various components with different asset lives. These include pipes, pumps, electrical switchboards and membranes in the case of desalination.</p> <p>A large portion of the costs associated with the construction of desalination plant are the ocean intake structure, transfer pipelines and building works which have longer asset lives.</p>
	<p>Suggestion to conduct a feasibility study before we go any further with a desalination plant</p>	<p>Initial feasibility studies have been undertaken for all shortlisted options as part of preparing the CCWSP. Further studies would be undertaken for the preferred portfolio to address remaining risks and uncertainties.</p>
	<p>Suggestion to consider rental desalination and water reuse plants available from various suppliers</p>	<p>That option may be cheaper as a short-term drought response for small communities. However, for larger communities the size of Central Coast, it would not be cost effective as a long-term supply source.</p>
	<p>Question if there are any new technologies, beyond desalination, that could be looked at.</p>	<p>Council has adopted an “all options on the table” approach and considered all current and emerging supply options.</p> <p>Future innovations would be considered as part of any future plan so the ability to retain flexibility in scale and timing of investments is a key consideration.</p>

	Question regarding the Israeli desalination process – has this been examined?	Council has considered current industry best practice in all options for the CCWSP and will follow developments in new technologies as they are proven.
	Question how we dispose of the salt and other chemicals? And any other biproducts of desalination?	Brine and other liquid stream by-products would be disposed via the existing Toukley sewerage scheme ocean outfall. This would be in line with the required environmental impact assessments and ongoing monitoring to avoid adverse impacts to the environment. This had been assessed and approved by the state government previously for the Council's potential Toukley 20ML/day drought response desalination scheme.
	Question if you will treat the brine with zero liquid discharge.	Brine would be disposed as a liquid stream as described above.
	Question about the desalination plant – when it is built and starts operating, will it be used only as required?	Any potential desalination plant would be operated in the most efficient manner, to provide the required additional water security and reliability.
Environmental flow substitution	Concerns that EFS will contaminate the river with the treated wastewater – it won't have the same minerals that it would have naturally as river water.	Further sampling and monitoring of the background river water would be required to ensure that any treated water is of a similar quality and has similar constituent minerals. A mineralising process may be required to match the background river flow.
Groundwater	Concerns regarding the use of groundwater, as not enough is known about recharge and its place in the ecosystem and geology.	Existing government regulations are in place to ensure that we would only extract groundwater in a sustainable manner. This will require further sampling, monitoring, testing and trial operations of Council's existing bores to confirm the reliable long-term yield. Extractions are governed by licence conditions regulated Department of Planning Industry and Environment (DPIE)
	Concern that use of groundwater won't be sustainable – there will be a drop in groundwater level	Existing government regulations are in place to ensure that we would only extract groundwater in a sustainable manner. This will require further sampling,

	and saltwater intrusion.	<p>monitoring, testing and trial operations of Council’s existing bores to confirm the reliable long-term yield.</p> <p>Extractions are governed by licence conditions regulated Department of Planning Industry and Environment (DPIE)</p>
	Concern regarding use of groundwater – it is recognised by the United Nations as being an outmoded solution reliant on large scale habitat destruction/alteration	<p>Existing government regulations are in place to ensure that we would only extract groundwater in a sustainable manner. This will require further sampling, monitoring, testing and trial operations of Council’s existing bores to confirm the reliable long-term yield.</p> <p>Extractions are governed by licence conditions regulated Department of Planning Industry and Environment (DPIE)</p>
	Question how much groundwater supplies will contribute to the severe drought scenario?	<p>Groundwater supply sources are recharged depending upon the aquifer characteristics and the rainfall in the region. During prolonged drought the supply from groundwater sources may be impacted. Council assumes a significantly reduced groundwater yield when planning emergency drought supplies.</p>
	Question what the long-term impacts of groundwater use are?	<p>The extraction of water from groundwater bores are monitored to be within the limits of its licence and recharged to avoid any harmful impact on groundwater dependant ecosystems or contamination or saltwater intrusion.</p>
	Question on what the potential impacts of groundwater extraction are – particularly on water dependant ecosystems like sandstone hanging swamps.	<p>Regular environmental monitoring is undertaken to assess the potential impacts of groundwater extraction on the environment, including known Groundwater Dependent Ecosystems (GDE’s).</p> <p>The protection of GDE’s is covered under the relevant Water Sharing Plans for Central Coast hardrock, alluvial and coastal aquifers., which Council must comply with.</p> <p>Further groundwater investigations will be undertaken at potential groundwater extraction locations to assess potential environmental impacts of any increased extraction.</p>
Purified recycled water (PRW)	Concerns that PRW could be contaminated with industrial waste	<p>Operation and monitoring of any PRW scheme would adhere to the Australian Guidelines for Water Recycling and water quality will meet the Australian Drinking Water Guidelines (ADWG).</p> <p>All treated water supplied would be fit for purpose and subject to multiple barriers against contamination.</p>

	<p>Concern that purified recycled water will add to greenhouse gas emissions through more energy use.</p>	<p>Energy requirements for PRW may be higher than Council's conventional water sources.</p> <p>Greenhouse gas emissions are being considered as part of Council's overall decision-making framework.</p> <p>It is noted that the emissions associated with ongoing energy consumption of any supply option could be subject to carbon offsetting and/or green energy at a higher cost to the customer.</p>
	<p>Concern that pumping recycled water into the river has the potential for polluting the environment</p>	<p>There already proven systems in place to avoid environmental pollution, with the environmental performance monitored by the New South Wales Environment Protection Authority (EPA).</p> <p>In addition, there are already examples in neighbouring Sydney where recycled water discharges upstream of intake points for water treatment plants downstream e.g. Sydney Water's Blue Mountains, Penrith, Wallacia and West Camden discharge recycled water into Nepean/ Hawksbury river system, upstream of the North Richmond Water Treatment Plant.</p>
	<p>Concerns regarding drinking wastewater</p>	<p>Operation and monitoring of any PRW scheme would adhere to the Australian Guidelines for Water Recycling and water quality will meet the Australian Drinking Water Guidelines (ADWG).</p> <p>All treated water supplied would be fit for purpose and subject to multiple barriers against contamination.</p>
	<p>Suggestion to harvest more water by replacing water with treated, recycled water</p>	<p>We have taken an 'all options on the table' approach. Our ten shortlisted options included a mixture of supply side and demand side measures to meet the future needs of the community – including stormwater harvesting and purified recycled water.</p> <p>No single option can effectively manage our future needs and a portfolio of options is required.</p>
	<p>Suggestion to power the PRW plant with renewable energy</p>	<p>It is noted that the emissions associated with ongoing energy consumption of any supply option could be subject carbon offsetting and/or green energy at a higher cost to the customer.</p> <p>No decision has been made in this regard.</p>
	<p>Suggestion to base our PRW model off the treatment and recycling of</p>	<p>Council has considered current industry best practice in all options considered under the CCWSP and will</p>

	wastewater in South Australia	follow developments in new technologies as they are proven.
	Question – if the water has been purified, why can't it be used directly for drinking water?	Adding the treated water to an existing dam or water body is known as environmental buffering. Council has assumed environmental buffering would occur to assist in gaining acceptance of a future scheme. However, environmental buffering does increase the cost of the water as it is required to be treated twice.
Rainwater tanks	Concern regarding plumbing arrangements – they need support of health authorities.	Currently rainwater tanks can be connected internally to toilet and washing machine and externally for lawn/garden water use. This is supported by NSW Health.
	Suggestion to make it mandatory for all new buildings, in particular commercial buildings, to have a rainwater tank that is proportionate to the size of building.	NABERS Energy (our national ratings system) and Water for Offices Rules are in place in NSW.
	Suggestion to focus rainwater tank subsidies on properties that are in fire prone areas.	There are a variety of factors other than water savings that could influence a suitable site for rainwater tanks including resolving local stormwater issues. The focus of the water security plan is on achieving the most efficient reductions in demand for drinking water.
	Suggestion for Council to consider encouraging existing houses to install water tanks – with or without a subsidy	Council promotes rainwater tanks through its love water campaign. This includes a series of videos and guides on how to give your system a 'health check' and improve its efficiency.
	Suggestion to consider buried water tanks at each property, or street corner, for rainwater and wastewater to be treated for use on lawns	Rainwater tanks are most cost effective when installed above ground. However, larger scale stormwater harvesting schemes may incorporate buried tanks where space is an issue.
	Suggestion to consider rainwater tank subsidies instead of	We have taken an 'all options on the table' approach and considered a mixture of supply side and demand

	desalination as it would be cheaper	<p>side measures to meet the future needs of the community.</p> <p>No single option can effectively manage our future needs and a portfolio of options is required.</p>
	Question what the current level of rainwater tank utilisation is?	Currently about 25,000 properties have rainwater tanks installed. Some of these tanks provide water for outdoor use only, while others are also internally connected for permitted uses. These are estimated provide about 2ML/day on long term average basis.
	Question asking how would the potential noise and greenhouse gas emissions from all the pumps be managed?	<p>Any rebate schemes would require installations to meet the relevant standards and development controls to manage impacts on neighbouring properties.</p> <p>The consideration of the overall greenhouse gas emissions is complex as some homes will already produce and/or purchase green energy or carbon offsets for their energy. There are energy savings for Council for water produced by the end user however those new pumps would operate less efficiently than Council's centralised supply scheme.</p>
Recycled water (non-drinking)	Suggestion to re-use wastewater on every construction site and rural road for dust runs – and ensure private construction companies do the same.	Council adopts stricter controls on certain construction uses as part of its water restrictions.
	Concerns with financial impacts of recycled water for non-drinking purposes	<p>Due to advanced treatment requirements and associated infrastructure, as well as high energy use, recycled water schemes are relatively high cost to build and operate for the volume of water produced. The demand for recycled water can also vary depending on weather, which can make the option less cost effective.</p> <p>However, because recycled water use reduces the demand for town water supply and wastewater releases, recycled water schemes can defer the need for investments in other parts of Council's water or wastewater systems.</p>
	Question regarding the number of water tankers filling up with fresh water – why	Council adopts stricter controls on certain construction uses as part of its water restrictions.

	can't they use recycled water?	
	Question asking what incentives or grants are available for non-residential customers to conserve water?	<p>The state government is currently preparing a state-wide water efficiency framework and implementation program. Council will be reviewing how this program can benefit the Central Coast community.</p> <p>Information on saving water can be found on Council's love water website.</p>
Stormwater harvesting	Suggestion to store rainwater, and all water that runs down our streets, underground, purify it and use it as drinking water.	<p>Individual stormwater harvesting is very practical and affordable to offset town water supply for some internal and external water usage.</p> <p>However, to capture, store and treat all water in the streets for drinking purposes would be quite challenging water quality wise and will be cost prohibitive.</p>
	Suggestion to increase water storage facilities in the suburbs	Council will consider the feasibility of future stormwater harvesting schemes and improving efficiency of existing schemes in suburban areas for irrigation of green spaces.
Water sharing between regions	Concerns that it only works if we have a surplus of water on the Coast or in the Hunter.	Central Coast and Hunter Water Corporation (HWC) systems both benefit from water sharing due to high yielding water supply catchments in Hunter region and availability of storage at Mangrove Creek Dam on Central Coast.
	Concerns regarding the negotiating of the water sharing, so that it benefits the residents of the Coast.	Water sharing between the regions is already happening – Central Coast and HWC systems both benefit from water sharing due to high yielding water supply catchments in Hunter region and availability of storage at Mangrove Creek Dam on Central Coast.
	Concern that Hunter Water Corporation also rely on surface water, so enhancing our sharing with them as climate change continues is unreliable.	<p>When it comes to long-term water planning, HWC is also using the “all options on the table” approach – just like Central Coast.</p> <p>Enhancing existing water sharing arrangement was considered as a common option in both regions’ plans.</p>
	Concern that enlarging the climate footprint of Central Coast residents by	HWC's water supply catchments yield large amounts of water, but it has lesser storage capacity to storage sustainably extracted water from its catchments – whereas, on the Central Coast, we can provide capacity

	<p>using water from a neighbouring catchment is not sustainable</p>	<p>to store that water which both regions will share as per agreement.</p> <p>Water is shared based on the availability of water, with the overall view that it mutually benefits both regions.</p>
	<p>Concern that linking to other water sources has the potential to spread the risk, and that as population grows, adjacent areas could potentially become enmeshed.</p>	<p>Both regions' plans have considered their growth requirements to determine their water sharing arrangement.</p>
	<p>Concern that sharing water with the Lower Hunter isn't an option during a long and severe drought as they will be in the same predicament.</p>	<p>The water sharing rules consider the relative risk of drought in both regions, and both regions can be simultaneously in drought.</p> <p>In the past HWC supported the Central Coast during the millennium drought when Central Coast was in drought – HWC was in a better position. However, in the recent drought (2017-20) the Central Coast provided water to HWC.</p>
	<p>Concern that Hunter Water Corporation also rely on surface water, so enhancing our sharing with them as climate change continues is unreliable.</p>	<p>When it comes to long-term water planning, HWC is also using the "all options on the table" approach – just like Central Coast.</p> <p>Water sharing provides long term mutual benefits to both regions.</p>
	<p>Suggestion to increase the water transfer between the Hunter and Central Coast.</p>	<p>As part of the CCWSP, we are considering enhancing our water sharing with HWC. This would involve further upgrades to existing water sharing assets with Hunter Water and providing additional storage at Mangrove Creek Dam to maximise the use of water available across the two regions and ensure mutual benefits to both organisations.</p>
	<p>Suggestion to share water on a national level.</p>	<p>Current viable water sharing is limited to the lower hunter region. Transfers beyond the Hunter region are not cost effective due to the large distances and topography involved. This contrasts with the electricity sector that can be more interconnected.</p>

	Question have meteorological studies taken place to determine if this would actually add to the resilience of water supply to both areas?	Long term rainfall, streamflow and evaporation records for both the Central Coast and Lower Hunter regions have been used to inform the assessment. A joint system model now allows the Central Coast and Lower Hunter supply schemes to be modelled holistically.
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Portfolios

Theme	Summary of theme / Example of comment	Council's response
Portfolios overall	Feedback that the amount each option in each portfolio contributes to the total water supply requirements is not clear.	The community will get the opportunity to understand this when the draft CCWSP is placed on public exhibition, later this year.
	Feedback that participant does not agree with the way each portfolio has been constructed.	Portfolios were constructed on four different themes: <ul style="list-style-type: none"> • climate independent • traditional • transitioning from traditional to climate independent • interregional water sharing. Each portfolio was targeted to meet the same gap between the future water supply and demand needs.
	Suggestion to let the proposed coal mine pay for any future costs around our water supply	There are consent clauses in the approval of the proposed mine for the compensatory arrangement of any loss of water due to proposed mining activity.
Portfolio 1	Question about rainwater tanks – why weren't they	This particular portfolio was based on the theme of climate independence. Rainwater tanks however are dependent on climate (i.e. they depend on rainfall).

	included in this portfolio?	
Portfolio 2	Concern that this portfolio would be more energy intensive and therefore less cost effective than portfolio 1.	<p>Portfolio 1 and 2 are quite similar – the only difference is that the desalination capacity is higher in Portfolio 2.</p> <p>This is to meet the required levels of service that aims to supply the Coast community with 125 litres of water, per person per day during a long and severe drought.</p>
	Concern that increasing the desalination capacity by 50% (from 20ML to 30ML/day) won't result in a significant decrease in unit cost as there would be a proportional increase in running costs and only a very minor decrease in capital cost per unit of production.	<p>In the long run there will only be a marginal increase (less than 4%) in the cost of water produced, based on capital and operating costs – if the 30ML/day desalination plant is built instead of the 20ML/day plant.</p> <p>The 30ML/day desalination plant can meet the preferred level of service – supplying the Coast community with 125 litres of water, per person per day during a long and severe drought.</p>
	Question about rainwater tanks – why weren't they included in this portfolio?	This particular portfolio was based on the theme of climate independence. Rainwater tanks however are dependent on climate (i.e. they depend on rainfall).
Portfolio 3	Concern that this portfolio focuses too much on surface water (aside from	That is a correct observation – this portfolio has more reliance on climate dependent sources which are unreliable due to uncertainties relating to climate change and variability.

	rainwater tanks) and surface water is unreliable	
	Suggestion to include purified recycled water for in this portfolio	This portfolio represents supplying water using traditional sources – so that is why PRW was not included as an option.
Portfolio 4	Suggestion to include environmental flow substitution as part of this portfolio, instead of dam enlargement.	The focus of this option was to demonstrate how water sharing can be enhanced with Hunter Water by providing additional storage to benefit from hunter water high yielding catchments. This option only provides mutual benefits when considered with enlarging the dam to 80GL of storage.
Portfolio 5	Suggestion to keep this portfolio, without desalination	Desalination is considered as a last option in this portfolio – providing the flexibility to leave this option out if it is not required.
	Question asking if this portfolio be implemented, as well as sharing water with the Lower Hunter?	The water sharing option provides mutual benefits only when considered with dam enlargement of 80GL. This would significantly increase the cost of this portfolio, making it less effective.
	Question if this portfolio could be planned, but delayed the construction of desalination plant to a later date, when the	Yes, desalination is already sequenced as the last option in this portfolio – providing the flexibility to defer this option and using the latest proven technology if/when it is built.

	<p>technology has matured further, making it more cost-effective due to reduced maintenance and construction costs?</p>	
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Water security and severe droughts

Theme	Summary of theme / Example of comment	Council's response
<p>Water restrictions, water security and severe droughts</p>	<p>Concern that the drought management plan doesn't include water irrigation used by agribusiness and large businesses.</p>	<p>Council's current drought management plan requires all businesses which use more than 3.5ML/year to have water efficiency management plans.</p>
	<p>Suggestion that water restrictions should apply all year not only when dam levels drop.</p>	<p>The Central Coast has permanent rules to conserve water. The target is to use no more than 150 litres per person per day. Water Wise Rules apply to all water users, including domestic, commercial, industrial and government, who use water sourced from the town supply.</p>
	<p>Suggestion that Council changes their water restrictions, so they are activated earlier.</p>	<p>The Central Coast has permanent rules to conserve water. The target is to use no more than 150 litres per person per day. Water Wise Rules apply to all water users, including domestic, commercial, industrial and government, who use water sourced from the town supply.</p> <p>In 2019, Council lifted the Level 1 water restriction trigger from the previous trigger of 40 percent and set it at 50 percent.</p>

	<p>Suggestion that during drought, public spaces for grass/gardens are on restrictions like home use.</p>	<p>Restrictions on the use of drinking water for irrigation of public open spaces are applied to non-residential customers including Council.</p> <p>Note that water restrictions only govern drinking water use – so an oval with recycled water or stormwater is exempt from restrictions provided no top up with drinking water occurs.</p>
	<p>Suggestion that Council shuts off water to the mines during severe droughts</p>	<p>Council will work with all intensive water users to understand their requirement and take necessary steps to manage water demand as part of their Water Efficiency Management Plans. This would include mines, breweries and manufacturing.</p>
	<p>Suggestion that residents are educated on water being essential for survival and hygiene instead of washing cars and watering gardens.</p>	<p>The focus of any water conservation education undertaken by Council is to educate the community about the value of water.</p> <p>Council currently runs a host of education programs around water conservation.</p> <p>Love water, use it wisely – this is the theme of our water education program, which commenced in April 2019. This program provides resources to increase water literacy on the Central Coast while developing a new digital footprint where the public can interact, explore, and have fun while learning all about water and its value.</p> <p>Some of the new resources developed have been implemented into the geography syllabus at local schools to introduce or reinforce water conservation concepts. Notable resources that were developed include:</p>

		<ul style="list-style-type: none"> • our Love Water website • an online water supply game: Working with Water • educational resources for primary and high school classes • repair and maintenance guides • a 360 virtual tour of two storage dams on the Central Coast • a small business water education program • a Central Coast water supply system animation • an optional installation of free smart water data loggers for two months – where Council can monitor the school’s water usage • Dr. Hydro Incursion at early childhood centres • water education packs at 130+ early childhood centres
	<p>Suggestion that residents who use bore water should comply with water restrictions to save groundwater</p>	<p>Council has no jurisdiction on individual water bores in people’s homes to implement this. Groundwater usage is regulated by the NSW State Government.</p>
	<p>Suggestion for incentives to encourage people to reuse grey water in toilet cisterns or install more rainwater tanks</p>	<p>Currently Council has no such program. The NSW Government is currently preparing a state-wide water efficiency framework that Council will participate in.</p>
	<p>Suggestion to secure more water during wet periods by increasing storage capacity</p>	<p>Council has considered Mangrove Creek dam enlargement in this context.</p>
	<p>Question what percentage of</p>	<p>Most of the water used on the Coast (70%) is used within the home.</p>

	<p>water is used by home usage as compared to business?</p>	<p>21% of water is used by non-residential customers (including some intensive water customers – mostly food manufacturing companies, power stations and business).</p> <p>9% of water is non-revenue water (NRW) which includes water for firefighting, unmetered connections, water theft, water main leaks, water lost in main breaks and water mains flushing etc.</p>
<p>Emergency drought levels of service (100 to 125 litres per person per day during a long and severe drought)</p>	<p>Concern that limiting water use could cause an increase in financial costs on water rates because of reduced revenue.</p>	<p>When supplies (dam storage) diminish too low there is risk of running out of water. Limiting demand is a better option than running out of water. The provision of emergency supplies will always be more costly than business as usual operations when supply sources are more plentiful.</p>
	<p>Concern that not all residents would comply with this – suggestion that Council introduces a deterrent where Council can recover any lost revenue by fining those who do not comply</p>	<p>There will always be a minority within the community who do not follow government requirements. Education of the community would play a significant role in addition to enforcement actions.</p>
	<p>Concern that it wouldn't be measured properly, and this will have an impact on those who live in units and smaller houses</p>	<p>Council is currently considering emergency drought supplies at a strategic level; however, these matters would be considered at a later date.</p>
	<p>Concern that it may be</p>	<p>Council would undertake extensive engagement in the lead up to reaching emergency supply levels.</p>

	<p>difficult to enforce, especially for visitors.</p>	
	<p>Concern with washing less frequently and using grey water in the washing machine</p>	<p>Washing less frequently shouldn't mean sacrificing hygiene. However, running machines with full load and less often can save water rather than running partial load and more often. For more tips on how you can conserve water, visit our Love Water website.</p>
	<p>Concern regarding hygiene – we need to be able to flush toilets based on health matters</p>	<p>The world health organisation identifies 50-100 litres limit per person per day is required to maintain basic hygiene – these falls within the 125 litres per person per day, level of service we are considering during a long and severe drought.</p>
	<p>Concern regarding livestock and the large numbers of pets and birds in the area – water should be available via bucket for trees and shrubs which are vital for the survival of the planet.</p>	<p>Council's level 5 water restrictions ban the use of drinking water supplies for external irrigation. Alternate sources such as roof water would need to be used for garden irrigation late in a drought or during an emergency supply scenario.</p> <p>Water exemptions would apply for pets.</p>
	<p>Concern that 3-minute showers are impossible for those who are physically disabled</p>	<p>There can be exemptions in these circumstances.</p>
	<p>Suggestion to recycle and conserve the</p>	<p>Council has a range of measures to provide long term supplies and contingency supplies during drought that includes recycled water and stormwater harvesting.</p>

	water that runs down the streets.	
	Suggestion to enforce residents to use greywater from sink, shower and washing machine for outside use	Council already bans the use of drinking water supplies outside of the home as part of its level 5 water restrictions. These would already be in force if emergency supply provisions or 100 or 125 litres per person per day were triggered.
	Suggestion for Council to consider restricting water use to 100 or 150 litres per person, per day even in times of no drought.	<p>The Central Coast has permanent rules to conserve water. The target is to use no more than 150 litres per person per day. Water Wise Rules apply to all water users, including domestic, commercial, industrial and government, who use water sourced from the town supply.</p> <p>The NSW State Government requires that all water authorities provide unrestricted supplies for most of the time.</p>
	Suggestion that if this is implemented, educate the community on how to save water in this way – for example, how to divert water from the shower to use in toilets etc	<p>Council intends to take a longer-term approach to education on water conservation. These would then increase during times of scarcity.</p> <p>For more tips on how you can conserve water, visit our Love Water website.</p>
	Suggestion that Council promotes incentives for lower water users.	<p>Your water, sewer and stormwater prices on the Coast are set by the Independent Pricing and Regulatory Tribunal (IPART).</p> <p>IPART has not agreed to inclining water tariffs for the next pricing path until 2026-27 but that may happen in future price determinations.</p>
	Question – can you	There is no definitive guide for sizing of severe drought demand. Council has taken some guidance from the World

	<p>please specify the extreme drought scenario that was used in the water demand modelling?</p>	<p>Health Organisation recommendations, Cape Town (South Africa) water rationing experience in 2020, Stanthorpe (QLD) experience in 2020, Sydney Water and Hunter Water planning and Department of Planning Industry and Environment (DPIE) drought funded programs to decide the demand scenario (125 Litres/person/day) to be taken for planning after community consultation.</p> <p>The average inflows available from its various sources during 2003 to 2006 (millennium drought) were used to estimate the supply side to meet the demand from existing sources and determine the gap to be filled from alternative supply (e.g. desalination)</p>
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Reducing our carbon footprint

Theme	Summary of theme / Example of comment	Council's response
<p>Reducing our carbon footprint</p>	<p>Concerns regarding hydro-schemes that require building of new dams – suggestion to focus on solar schemes.</p>	<p>Council may purchase green energy, carbon offsets or generate energy onsite to reduce its carbon footprint.</p> <p>It has no current plans to construct a new dam for a hydro generation scheme.</p>
	<p>Concerns that reducing carbon impacts will make water more expensive</p>	<p>When comparing the cost effectiveness of desalination to other options, Council has allowed for the cost of carbon offsetting the associated energy consumption. This will inform whether desalination with carbon offsetting is still cost effective compared to other options.</p>
	<p>Concern that using project offsets for desalination wouldn't supplement it 100% - suggestion to make</p>	<p>Council has assessed the cost of desalination to operate on 100% carbon offset energy. These offsets are purchased via the energy retailer from accredited schemes.</p>

	<p>desalination run on green energy 100%.</p>	
	<p>Concern that buying renewable energy may not help as it takes from the limited renewable resources and forces use of fossil fuel energy for other purposes.</p>	<p>There is a link between supply and demand for products. Energy forecasts predict that the proportion of renewable energy within the NSW market will continue to grow into the future.</p> <p>Council will not have a material impact on the state-wide balance.</p>
	<p>Concern that carbon offset programs is being discussed rather than zero carbon – concern it is introducing a solution that can be achieved via more sustainable options</p>	<p>The energy prices used in assessing the operational cost of a desalination plant have assumed 100% carbon offsetting for the comparison of options.</p> <p>Council will consider the most efficient way to achieve that outcome if it were to progress the delivery of a desalination plant.</p>
	<p>Suggestion for Council to consider powering all these options (e.g. desalination, dams etc) using green energy</p>	<p>The energy prices used in assessing the operational cost of a desalination plant have assumed 100% carbon offsetting for the comparison of options. This is due to the very high energy intensity of this option relative to all other options, and the associated emissions being the main negative environmental impact that hadn't already been mitigated. Council would consider the most efficient way to achieve that outcome if it were to progress the delivery of a desalination plant.</p> <p>Carbon offsetting for the operational phase of any other options will not be considered for the CCWSP at this stage. Consideration of offsetting carbon emissions from day to</p>

		<p>day operations of the water supply scheme is outside the scope of the CCWSP.</p>
	<p>Suggestion to include a carbon neutral and cost-benefit positive energy supply into the planning of a desalination plant i.e. Council should consider owning and operating the requisite local renewable energy source as well</p>	<p>Council would consider the most efficient way to achieve carbon neutral energy if it were to progress the delivery of a desalination plant.</p> <p>This could take one of many forms and ownership models.</p>
	<p>Suggestion for Council to make case studies of water conservations programs should be made more public.</p>	<p>Council will seek to promote future water conservation programs via its love water website and relevant engagement channels.</p>
	<p>Question how do we know that the community values environmental sustainability, and have we informed them of the cost of these measures in terms of rate increases?</p>	<p>During all three phases of consultation with the community – through our online forums, in-depth phone interviews and online surveys – we addressed their water values.</p> <p>In the first phase of consultation, many water values emerged that Council needs to be cognisant of when planning water for the future, such as reliability, affordability and environmental impact.</p> <p>In the second phase of consultation, there was agreement amongst participants of this community engagement process that the water values generated in the first round of engagement are appropriate for Council to use as a decision-making framework when considering which water supply and demand options to invest in the future – in particular long-term reliability, environmental impact and</p>

		<p>cost to operate are felt to be very important in the decision-making process.</p> <p>Within the second phase of consultation participants were informed of the cost of each of the options, referring to the cost as either low, medium or high. In the third and final round of consultation, participants were informed of their costs to build and operate.</p>
	<p>Question asking if Council can buy carbon from residents who have larger areas of trees?</p>	<p>Council would only purchase offsets through accredited schemes. These are typically managed by an energy retailer.</p>

Miscellaneous

Theme	Summary of theme / Example of comment	Council's response
Governance	Concerns that the Central Coast's water will be privatised.	Council has no current plans for privatisation.
	Suggestion to nationalise the water system	Council is not aware of any plans to nationalise the water system. Council currently undertakes inter-regional water sharing with Hunter Water Corporation.
	Question why isn't this planning being done by the NSW government?	NSW local water utilities are responsible for planning their water supply systems as part of their Integrated Water Cycle Management Plan. The Department of Planning Industry and Environment (DPIE) has issued guidelines for water utilities to provide guidance on this.
Finances	Question with Council's current financial situation, how are we supposed to afford any of these options or portfolios?	<p>Council's plan seeks to undertake smaller scale, cost effective upfront investments, while deferring larger investments into the future.</p> <p>Future large-scale investments would be funded through a mixture of developer charges, government grants and Council sourced funding.</p>
	Concern that the water rates on the	Information contained within the government's National Performance Report 2019-20 identifies Central Coast

<p>Central Coast are one of the highest in NSW</p>	<p>Council as one of the lowest average water and sewerage bills across all NSW water providers.</p> <p>Your water, sewer and stormwater prices on the Coast are set by the Independent Pricing and Regulatory Tribunal (IPART).</p> <p>Council is developing its pricing submission to IPART for the period 1 July 2022 to 30 June 2026.</p> <p>IPART will be placing Council's next pricing submission on public exhibition later this year. During this time, the community will be able to review the submission and provide their feedback to IPART via a formal submission process</p>
<p>Suggestion to provide a discount to ratepayers who have rainwater tanks</p>	<p>Customers with functioning rainwater tanks already receive cheaper water bills owing to the associated reductions in their consumption.</p>
<p>Suggestion to consider IPART recommendations from the last price submission and build in those efficiencies to help fund future water projects and maintain customer bills.</p>	<p>Your water, sewer and stormwater prices on the Coast are set by the Independent Pricing and Regulatory Tribunal (IPART).</p> <p>Council is developing its pricing submission to IPART for the period 1 July 2022 to 30 June 2026.</p> <p>IPART will be placing Council's next pricing submission on public exhibition later this year. During this time, the community will be able to review the submission and provide their feedback to IPART via a formal submission process.</p>
<p>Suggestion that any consideration should aim to reduce people's water bills, not increase them.</p>	<p>Council will be considering the financial impacts as part of its overall decision-making framework for the CCWSP.</p>
<p>Suggestion to consider setting staged water prices so that excessive water users pay a premium.</p>	<p>Your water, sewer and stormwater prices on the Coast are set by the Independent Pricing and Regulatory Tribunal (IPART).</p> <p>Council is developing its pricing submission to IPART for the period 1 July 2022 to 30 June 2026.</p> <p>IPART will be placing Council's next pricing submission on public exhibition later this year. During this time, the</p>

		community will be able to review the submission and provide their feedback to IPART via a formal submission process.
Environment	Concern regarding our biodiversity – it must be protected by protecting the health of the rivers and waterways.	As part of its overall decision-making framework, Council will consider the impacts on local biodiversity for the CCWSP.
	Suggestion to consider reducing land clearing as this impacts rainfall	As part of its overall decision-making framework, Council will consider the impacts on local biodiversity for the CCWSP.
	Suggestion to never allow mining under a dam or a water supply system	Council objected and maintains objection to any mining under the region’s drinking water catchment. The NSW State Government is the determining authority for those activities.
	Suggestion to place the environment as a high priority in this plan	Council places a high priority on minimising any environmental impacts – both on land and in the water.
Population and development	Concern that the Central Coast population is growing too fast for our water supply to keep up	Currently available population growth forecasts will be assessed to prepare the CCWSP. We recognise the uncertainties associated with these forecasts and will be proposing a CCWSP that is flexible and adaptable to respond to this uncertainty.
	Suggestion to reduce our residential development and slow down population growth on the Coast to reduce future demand	The NSW State Governments Central Coast Regional Plan 2036 identifies expected population growth across the region. The CCWSP will identify the preferred approach to cater for this growth, while also managing future uncertainties posed by drought and climate change.

	Suggestion to stop developing the Coast while there is a shortage of water	The CCWSP will ensure Council's current water supply system provides a suitable level of supply for the current level of demand and predicted growth in the short term.
Water quality	Concern around the flavour of water from the tap – it tastes and smells like chlorine and has a very bitter after taste.	<p>Council adds chlorine to the water supply to remove harmful bacteria. A small residual of chlorine is required to be present in water coming from your taps and, from time to time, a slight chlorine taste or smell may be present.</p> <p>Seasonal changes in demand, the distance from the water filtration plant and unavoidable changes to system operation, can impact the amount of chlorine residual in your water. The taste and smell of chlorine can be eliminated by placing some water in a covered jug in the refrigerator. It is recommended this water be consumed within 24 hours. Domestic water filters or jug filters are also useful.</p>
	Suggestion to be a local government area that is free from bottled water.	<p>We have over 50 water refill stations installed across high traffic areas on the Coast – making filling up your water bottle while you're out and about on the Coast a whole lot easier.</p> <p>Additionally, as part of our Playspace Strategy, Council provides drinking water fountains at district and regional playspaces on the Coast.</p>
	Suggestion to consider better pipeline management for better tasting water.	Council is conscious of its goal to provide clean and safe drinking water to all customers. Council undertakes various ongoing maintenance, upgrade and renewal programs to ensure the water remains safe to drink.
	Question about the colour of water – it is sometimes brown, is it safe to drink?	<p>Although town drinking water supplies are generally colourless, from time to time the water's appearance can change.</p> <p>Sometimes it can take on a yellow or reddish/brown tint to almost being black, while at other times it can appear milky white or blue. This change can occur for several reasons.</p> <p>Yellow, reddish/brown, or black water is usually caused by natural minerals such as iron and manganese. Milky or white water can occur when air becomes trapped in water pipes. Blue stains are common if your hot water cylinder is made from copper.</p>

		<p>Discoloured water is more commonly experienced during summer and periods of daily or seasonally higher demand, in low lying areas, dead end streets and streets that normally experience low flow velocities</p> <p>Prior to undertaking any works, Council performs a risk assessment and takes any necessary action to prevent or mitigate discoloured water. We notify residents in advance of planned water supply works via hand delivered notices, advertisements and our website.</p> <p>Report drinking water quality issues to Council on 1300 463 954.</p>
Regulation	<p>Question if organisations are being policed to make sure their waterways are not being clogged with debris, providing them with more water during dry periods?</p>	<p>The Central Coast Water Sharing Plan is managed by the NSW State Government and establishes rules for water management including the limit of the total volume of water that can be extracted from the water sources in the Central Coast area.</p> <p>Each significant user is subject to an extraction licence that outlines the conditions for extraction of water from the environment, with those licences regulated by the NSW State Government.</p>
Other water authorities	<p>Concern that we could end up like the Murray Darling basin – i.e. what happens to water quality and the ecosystem when water is 'mined' for commercial use</p>	<p>The Central Coast is fortunate that its drinking water catchments are contained within the Central Coast Local Government Area and not subject to external upstream impact by other water authorities.</p> <p>The Central Coast Water Sharing Plan is managed by the NSW State Government and establishes rules for water management including the limit of the total volume of water that can be extracted from the water sources in the Central Coast area.</p>
	<p>Concern that the use of river water for industry upstream of catchments for people's household use is not being carefully monitored.</p>	<p>The Central Coast Water Sharing Plan is managed by the NSW State Government and establishes rules for water management including the limit of the total volume of water that can be extracted from the water sources in the Central Coast area.</p> <p>Each significant user is subject to an extraction licence that outlines the conditions for extraction of water from the environment, with those licences regulated by the NSW State Government.</p>

	<p>Suggestion to consider the options that have worked for other water authorities.</p>	<p>We've worked closely with Hunter Water Corporation to develop our CCWSP.</p> <p>Current and emerging best practice across Australia and globally were considered when preparing the shortlisted options.</p>
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6 Next steps

All the feedback received as well as other ongoing investigations, modelling and analysis will be used to inform the development of the draft Central Coast Water Security Plan.

The draft plan will be placed on exhibition in late 2021 where the community will be able to again have their say.

We will inform the community of the finalised plans in the coming months.

7 Appendices

7.1 Appendix A – Deliberative forum agendas

Deliberative forum 1 agenda




Central Coast Council Deliberative Forum 1 Agenda **FINAL**

Project:	Central Coast Council Integrated Water Resources Plan - Phase 1 (via Zoom)		
Date	Thurs 3 rd Dec 2020: Vulnerable customers Tues 8 th Dec: SME customers Thurs 10 th Dec: Residential customers	Time: 6.00 - 7.40pm	Duration: 1hr 40mins
Forum outcomes:	<ul style="list-style-type: none"> Perceptions and understanding of Council's role regarding water, water literacy Water usage and perceptions of water security, drought measures Identify customer values with regard to water supply, waste and management Attitudes to water restrictions and acceptability of water restriction/what are the trade offs Generate interest in staying involved in the process Start the learning journey of the participants towards greater water literacy and advocacy 		

Time	Session details	Responsibility	Materials
5.45pm onwards	Pre-forum – Registration of participants <ul style="list-style-type: none"> Assist participants with Zoom, etc 	WR	
6.00-6.03	Welcome and Introduction <ul style="list-style-type: none"> Welcome and thanks for joining the Zoom discussion Acknowledgement of Country Purpose of session and topics we will cover Structure of the session (and explanation of break out sessions) Guidelines; no right or wrong answers; try not to dominate, etc Introduce the Central Coast Council representatives – 	WR Lead Facilitator	PP slides
6.03-6.08pm	Presentation and welcome by Central Coast Council (CCC) <ul style="list-style-type: none"> Explanation of the background and purpose of the Forum. Stress importance of the Forum to CCC and how community feedback will be used. 	Central Coast Council – Jamie Loader	PP slides
6.08-6.12pm	Quick poll - Perceptions of CCC <ul style="list-style-type: none"> Introduce polling. <p>Q1. Where do you personally sit on a scale from 'I use as little water as I possibly can' to 'I use as much water as I want to and don't really worry about it'. Choose a number between 1-10 between these two statements, where a low score is you use as little as possible and a higher score is you use whatever water you need and don't worry about it. 1 – 10</p> <p>Q2. Which of the following statements do you identify with most?</p> <ol style="list-style-type: none"> 1. I never really think about where my water comes from 2. I rarely think about where my water comes from 3. I'm thinking about it more and more 4. I'm frequently thinking it <p>Q3. Do you have a rain water tank?</p> <ol style="list-style-type: none"> 1. Yes, and I use it regularly 2. Yes, but I don't use it 	WR Lead Facilitator	Poll questions on screen

	3. No 4. DK		
6.12-6.20pm	<p>Breakout group discussion:</p> <p>Introductions and Current Water Usage</p> <ul style="list-style-type: none"> Participants to introduce themselves; where they live; how they use water e.g. garden, pool, water tank, recycled water Do you think about water or the importance of water in your life? Do you take it for granted? Has it changed recently? Do you usually monitor the amount of water you use? Awareness of CCC's role regarding water? 	WR break out group facilitators	
6.20-6.35pm	<p>What customers value</p> <ul style="list-style-type: none"> Thinking about the future, what is important in terms of how your water is supplied; and how the wastewater (used water, sewerage) is disposed of? What does Council need to take into consideration when planning for the future – in terms of water supply options? Explain that we're now going to create a value tree for water - <i>SHARE SCREEN AND SHOW TREE DIAGRAM IN MIRO</i> So what are some of the values when thinking about water management and supply options. (By values I mean considerations or things that are important; OR when assessing water supply options what criteria should they assess them on) <p><i>Facilitator to write on sticky notes the key words and thoughts linking the 'values'. Probe and tease out the thoughts and ideas, then name the values on the branches e.g. environment, social equity, resilience, financial, quality, sustainability, intergenerational equity</i></p> <ul style="list-style-type: none"> Reflecting on the Value Tree, what are the top or most important 'values' or priorities for you when thinking about water planning/supply (choose 3 only)? Collectively agree on the table's Top Values – and group them into categories 	WR break out group facilitators Exercise in MIRO	
6.35 - 6.45pm	<p>Presentation: Water Supply and Demand Balance</p> <ul style="list-style-type: none"> Services and role of CCC Our water supply system Average residential demand Projected demand for water 	CCC – Luke Drury	PP slides
6.45 - 6.55pm	<p>Breakout groups - Pub quiz</p> <p>Q1. How much does it cost to fill a 1 litre bottle with drinking water from the tap?</p> <p>Q2. What is the current total dam storage level of the Central Coast region?</p> <p>Q3. What do the dam level need to reach before any restrictions are introduced?</p>	WR break out group facilitators	PP slide of Pub quiz questions

	<p>Q4. How many litres per minute does the average shower head use?</p> <p>Q5. On average, how many litres does a full flush of a modern toilet use?</p> <p>Q6. How much water do you think each person uses per day on average on the Central Coast?</p> <p>Q7. On average, where does the greatest amount of water consumption occur within a property??</p> <p>Q8. How would drinking water from the tap compare to bottled water bought at the supermarket in terms of quality?</p>		
6.55-7.00pm	Answers to the pub quiz and determination of the winner	WR Lead Facilitator	PP slides
7.00-7.10pm	<p>Breakout group discussion: Attitudes to water restrictions</p> <ul style="list-style-type: none"> Thinking now about experiences of droughts – what do you think are the impacts on people/the community of drought (PROBE FOR: Environmental, social, health and well-being)? What did you find most difficult in the last drought? Should water use be restricted? – or do we have the right to water all the time? Thoughts about CCC’s restrictions – were they fair?; introduced at appropriate times?; what restrictions were most difficult? Should there be any exemptions from restrictions e.g. importance of keeping sports ovals, parks green; older people; vulnerable/disadvantaged people? 	WR break out group facilitators	
7.10-7.15pm	<p>Presentation: Water restrictions</p> <ul style="list-style-type: none"> CCC’s water restrictions policy and triggers for restrictions Strengths and challenges of water restrictions Examples of water restrictions 	CCC – Natalee Evans	<p>PP slides</p> <p>Slides on water restrictions</p>
7.15 - 7.30pm	<p>Breakout group discussion: Water Restriction Policy</p> <ul style="list-style-type: none"> Reactions to CCC restriction policy What level of restrictions are acceptable at each stage? What are you willing to trade off? e.g. wash car or green lawn? The worst case scenario is to run out of water. How important is it that CCC plans to never run out of water, bearing in mind the economic, environmental and social costs? <p>SHARE ACTIVITY SHEETS ON SCREEN: ACCEPTABILITY OF RESTRICTIONS AT EACH STAGE – TWO PAGES</p> <ul style="list-style-type: none"> For the types of restrictions listed, let’s determine as a group which is appropriate: ‘At all times’; Early drought’, ‘Mid drought’, ‘Late drought’ and which if any, are ‘Never Acceptable’ regardless of conditions. Should other restrictions be added to the list? What restrictions for business should be implemented in comparison to the ones for residents? 	WR break out group facilitators	ACTIVITY SHEET: Acceptability of water restrictions

<p>7.30-7.35pm</p>	<p>Polling questions:</p> <ul style="list-style-type: none"> • For each of the following restriction please indicate the level of acceptability? <ul style="list-style-type: none"> ○ At all times ○ Early drought ○ Mid drought ○ Late drought ○ Never acceptable <p>Q1. No outdoor watering between 10am and 4pm (with hose or sprinkler) Q2. Domestic outdoor water use banned (no hosing, sprinklers, drip irrigation or watering cans at any time) Q3. Shower for less than 4 minutes each day Q4. Willingness to collect water at a centralised collection point? [Because the water system needs a certain amount of water to operate safely] Q5. Decrease your frequency of washing machine use (for clothes)</p>	<p>WR Lead Facilitator</p>	
<p>7.35-7.38pm</p>	<p>Presentation: Next steps, staying involved</p> <ul style="list-style-type: none"> • CCC to present next steps and plans/timelines for deliberative forums • Encourage people to stay involved Ways to stay involved 	<p>CCC – Jamie Loader</p>	<p>PP Slides</p>
<p>7.38-7.40pm</p>	<p>CLOSE</p> <ul style="list-style-type: none"> • Thank everybody for attending • Explain the procedure for receiving incentive • Look out for emails from us in the future about the Round 2 forums in February 2021 	<p>WR Lead Facilitator</p>	

Deliberative forum 2 agenda



Central Coast Council Deliberative Forum 2 Agenda **FINAL**

Project:	Central Coast Council – IWRP PHASE 2 (via Zoom)				
Event:	2 x Zoom Forums – Round 2				
Dates:	Tuesday 23 rd Feb and Thursday 25 th Feb	Time:	6.00-7.36pm	Duration:	1 hour 35 mins
Forum objectives:	<ul style="list-style-type: none"> • Rating importance of values to inform future decision making • Reactions to possible water supply & demand methods • Willingness to pay for a rainwater tank • Willingness to pay for 'Environmental Offsets' which may improve the Environmental impact for any particular one of the 9 demand/supply OPTIONS 				

Time	Session details	Responsibility	Materials
5.45pm onwards	Pre-forum – Registration of participants <ul style="list-style-type: none"> • Assist participants with Zoom, etc 	WR	
6.00-6.06pm (6 mins)	Presentation: Welcome and introduction <ul style="list-style-type: none"> • Welcome back and welcome if you are joining for the first time; thanks for joining the Zoom discussion • Acknowledgement of Country • Purpose of session and topics we will cover • Structure of the session (and explanation of breakout sessions) • Guidelines; no right or wrong answers; etc • Introduce the Central Coast Council representatives Polling questions Q. There are many options Central Coast Council could consider to ensure there will be enough water for our region into the future, for each option, please indicate how open you are to Council considering this as an option (regardless of how much you know about each option). <ol style="list-style-type: none"> 1. Conservation of water (i.e. reducing everyone's demand for drinking water e.g. water restrictions) 2. Dams 3. Desalination (i.e. treating seawater for drinking) 4. Ground water (i.e. extracting water from beneath the ground and treating for drinking) 5. Recycled water – for non-drinking (i.e. treating and reusing sewage for non-drinking uses) 6. Purified Recycled water – for drinking (i.e. treating and reusing sewage, adding it to existing water sources like dams or aquifers, then treating it again and using it for drinking) 7. Environmental Flow Substitution (i.e. the addition of highly treated wastewater to a river to offset greater extraction upstream) 	WR Lead Facilitator	PPT slides

	<p>8. Stormwater harvesting (i.e. treating and reusing stormwater for nondrinking uses) 9. Water sharing between regions (i.e. transferring water across regions to where it is needed most)</p> <p>They definitely should be considering this option 1 I am quite open to them considering this option 2 I am undecided 3 I am slightly against them considering this option 4 They should not be considering this option 5 Don't know 6</p> <p>SHARE RESULTS</p>		
6.06 - 6.13pm (7 mins)	<p>Presentation: Welcome, Recap and Planning for the Future</p> <ul style="list-style-type: none"> • Purpose of this round of forums – to discuss demand and supply options for the future. • Deliverables of IWRP • Re-cap of Community Engagement platform • Supply/demand balance & drought planning – introduce the concept of upfront investment vs drought response risk • Uncertain future – challenges/opportunities • Drought response; we need to be adaptable, ready for an uncertain future; storage levels • Findings from Round 1 forums - Key values/considerations you would like CCC to consider when planning for the future • In deciding what the plan should be, we will be taking into account the factors/considerations that you thought were important, summarised as: <ul style="list-style-type: none"> ○ Affordability - cost to build and cost to operate ○ Reliability ○ Environmental impact ○ Water quality ○ Empowering people ○ Education ○ Increasing efficiency/innovation ○ Social impact/equitable 	CCC – Luke Drury (23/2), Jamie Loader (25/2)	PPT slides
6.13 – 6.21 (8 mins)	<p>Breakout session: Discussion of considerations</p> <ul style="list-style-type: none"> • Thoughts about these considerations – do you agree with them. • Are they of equal importance or are some more important than others? • Which one/ones are most important? • Any other considerations missing? 	WR Facilitators	Share screen with chart of considerations
6.21 - 6.27 (6 mins)	<p>Polling questions:</p> <p>Q. Please provide a score out of 10 for importance for the following considerations ...</p> <ul style="list-style-type: none"> ○ Cost to build ○ Cost to operate ○ Reliability 	Lead facilitator	PPT slide

2

	Supportive 2 Neutral 3 Unsupportive 4 Very unsupportive 5 Don't know 6 SHARE RESULTS		
7.02 – 7.04	Any questions from the floor/in the chat?	Lead Facilitator	
7.04-7.24pm (20 mins)	Breakout discussions: Discussion on the 6 supply-side options – SHARE SCREEN showing summary of each option <ul style="list-style-type: none"> • RECORD breakout session • Ask participants to input, show video and put on gallery view if they haven't already • For each option explore likes/dislikes • Any concerns/worries/questions about each one • Areas where they need further information • Specific questions: <ul style="list-style-type: none"> ○ Purified recycled water for drinking – some people just don't like this idea because of the 'yuk' factor? Thoughts/concerns. ○ What about having PRW fed back into a dam – to mix with dam water and used for drinking later? 	WR Facilitators	Factsheets (if needed) for moderator to share screen
7.24-7.28pm (4 mins)	Rainwater tanks rebate and polling questions Welcome back. Council are considering a subsidised scheme to encourage you to invest in a rainwater tank. There are two types of 5000 litre tanks, with estimated costs outlined. Polling questions: EXTERNAL RAINWATER TANK Q. How likely would you be to pay over \$4000 towards the cost of installing an external rainwater tank (and Council would pay the rest) Very likely 1 Quite likely 2 Undecided 3 Quite unlikely 4 Very unlikely 5 Don't know 6 Q. How likely would you be to pay \$2,500 - \$4,000 towards the cost of installing an external rainwater tank? (Same Scale as above) Q. And what about \$1,000 to \$2,500.. Would you be... (Same scale) Q. And what about less than \$1000. Would you be... (Same scale)	WR Lead Facilitator	PP slides

4

	<p>EXTERNAL & INTERNAL RAINWATER TANK</p> <p>Q. How likely would you be to pay over \$4000 towards the cost of installing an external rainwater tank (and Council would pay the rest)</p> <p>Very likely 1 Quite likely 2 Undecided 3 Quite unlikely 4 Very unlikely 5 Don't know 6</p> <p>Q. How likely would you be to pay \$2,500 - \$4,000 towards the cost of installing an external rainwater tank? (Same Scale as above)</p> <p>Q. And what about \$1,000 to \$2,500.. Would you be... (Same scale)</p> <p>Q. And what about less than \$1000. Would you be... (Same scale)</p> <p>Q. And overall, assuming the Council offered a subsidy that was acceptable to you, which type of tank would you prefer if any...</p> <p>An external rainwater tank 1 An external and internal rainwater tank 2 Both (an external and an internal) i.e. purchase 2 tanks 3 None I do not want to purchase a rainwater tank 4</p> <p>SHARE ANSWERS</p>		
<p>7.28 – 7.33 (5 mins)</p>	<p>Final polling question</p> <p>Now you've had a chance to learn more information about the water supply options and hear other people's views, we'd like to ask you again how open you are to Council considering the one (we asked this question at the beginning of the forum)</p> <p>Q. For each option, please indicate how open you are to Council considering this as an option.</p> <ol style="list-style-type: none"> 1. Conservation of water e.g. water restrictions 2. Dams 3. Desalination 4. Ground water 5. Recycled water – for non-drinking 6. Purified Recycled water – for drinking 7. Environmental Flow Substitution – putting recycled water back into the river system 8. Stormwater harvesting e.g. re-use of stormwater and capture of rainwater in tanks 9. Water sharing between regions 	<p>WR Lead facilitator</p>	<p>Polling questions</p>

5

	They definitely should be considering this option 1 I am quite open to them considering this option 2 I am undecided 3 I am slightly against them considering this option 4 They should not be considering this option 5 Don't know 6		
7.33-7.35pm (2 mins)	Presentation: Next steps, staying involved <ul style="list-style-type: none"> • CCC to present next steps and plans/timelines for any other deliberative forums • Encourage people to stay involved Ways to stay involved Summing up and close 	CCC – Luke Drury (23/2), Jamie Loader (25/2)	PPT slides
7.35-7.36pm (1 min)	CLOSE <ul style="list-style-type: none"> • Thank everybody for attending • Explain the procedure for receiving incentive • Look out for emails from us in the future about the Round 3 forums in April 2021 (at this stage). 	WR Lead Facilitator	

Deliberative forum 3 agenda

Central Coast Council Engagement – Round 3 Forum Agenda **FINAL**

Project:	Central Coast Council – IWRP PHASE 3 (via Zoom)				
Event:	2 x Zoom Forums – Round 3				
Dates:	Tuesday 20 th April and Thursday 22 nd April	Time:	6.00-7.40pm	Duration:	1 hour 40 mins
Forum objectives:	<ul style="list-style-type: none"> • Re-capping previous engagement and sharing results of preferred water supply and demand options from forums • Reactions to possible portfolios of water supply & demand methods • Level of support for each portfolio • Reactions to Emergency Drought Management Plan and level of support for two options 				

Time	Session details	Responsibility	Materials
5.45pm onwards	Pre-forum – Registration of participants <ul style="list-style-type: none"> • Assist participants with Zoom, etc 	WR	
6.00-6.06pm (6 mins)	Presentation: Welcome and introduction <ul style="list-style-type: none"> • Welcome back and welcome if you are joining for the first time; thanks for joining the Zoom discussion • Acknowledgement of Country • Purpose of session and topics we will cover • Structure of the session (and explanation of breakout sessions) • Guidelines; no right or wrong answers; etc • Introduce the Central Coast Council representatives 	WR Lead Facilitator	PPT slides
6.06 - 6.16pm (10 mins)	Presentation: Welcome and Recap of where we are and results of previous forums <ul style="list-style-type: none"> • Purpose of this round of forums – to reveal and discuss the mix or portfolios of demand and supply options for the future. • Re-cap IWRP and supply and demand balance and the Community Engagement platform • Reveal findings from Round 2 forums – water values and preferences for a range of options you would like CCC to consider when planning for the future. • Explain the need for a portfolio approach – i.e. no single option will suffice in isolation, we need to consider alternative combinations of demand and supply options • Reasons why some options are and are not included in the portfolios • Reveal grid of the Portfolios 	CCC – Luke Drury / Jamie Loader	PPT slides

<p>6.16 – 6.24 (8 mins)</p>	<p>Breakout session: Discussion of this matrix and the broad options – Discuss 4 themes/show summary chart of Portfolios</p> <ul style="list-style-type: none"> • Thoughts about the portfolio approach overall • Opinions/thoughts about the Portfolio themes – do they seem appropriate (i.e. climate independence, surface water, enhanced water sharing and transitioning to climate independent sources) • Brief, positives/aspects liked about these Portfolios • Any negatives/concerns at this stage 	<p>WR Facilitators</p>	<p>Share screen with grid of option elements</p>																				
<p>6.24- 6.32pm (8 mins)</p>	<p>Presentation of the portfolios: Portfolios 1 & 2</p> <ul style="list-style-type: none"> • Brief summary of all the portfolios – 5 in total • Overview of Portfolios 1 and 2 	<p>CCC – Natalee Evans</p>	<p>PPT slides</p>																				
<p>6.32- 6.40pm (8 mins)</p>	<p>Breakout discussions: Discussion on Portfolios 1 & 2 SHARE SCREEN showing summary of each option</p> <ul style="list-style-type: none"> • RECORD breakout session • Ask participants to input, show video and put on gallery view if they haven't already • Thoughts/initial reactions to the portfolio elements • Portfolios 1 & 2 are very similar – except Portfolio 2 has a larger capacity desal plant. • Discuss strengths/weaknesses • Any concerns/worries/questions about it one • Areas where further information is needed 	<p>WR Facilitators</p>	<p>Summary of the portfolio for moderator to share screen</p>																				
<p>6.40 – 6.43pm (3 mins)</p>	<p>Polling question</p> <p>We now have some polling questions about the two portfolios you have just discussed.</p> <p>Q. How supportive would you be of Council considering Portfolio 1? Would you:</p> <table data-bbox="399 1377 718 1556"> <tr><td>Totally support it</td><td>1</td></tr> <tr><td>Slightly support</td><td>2</td></tr> <tr><td>Neutral</td><td>3</td></tr> <tr><td>Slightly oppose</td><td>4</td></tr> <tr><td>Totally oppose it</td><td>5</td></tr> </table> <p>Q. And how supportive would you be of Council considering Portfolio 2? Would you:</p> <table data-bbox="399 1668 718 1848"> <tr><td>Totally support it</td><td>1</td></tr> <tr><td>Slightly support</td><td>2</td></tr> <tr><td>Neutral</td><td>3</td></tr> <tr><td>Slightly oppose</td><td>4</td></tr> <tr><td>Totally oppose it</td><td>5</td></tr> </table> <p>SHOW RESULTS</p>	Totally support it	1	Slightly support	2	Neutral	3	Slightly oppose	4	Totally oppose it	5	Totally support it	1	Slightly support	2	Neutral	3	Slightly oppose	4	Totally oppose it	5	<p>Lead facilitator</p>	<p>PPT slide</p>
Totally support it	1																						
Slightly support	2																						
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Slightly oppose	4																						
Totally oppose it	5																						
Totally support it	1																						
Slightly support	2																						
Neutral	3																						
Slightly oppose	4																						
Totally oppose it	5																						

6.43-6.48pm (5 mins)	Presentation of portfolio 3: <ul style="list-style-type: none"> Reveal and explain Portfolio 3 	CCC – Natalee Evans	PPT slides														
6.48 - 6.56 (8 mins)	Breakout discussions: Discussion on Portfolio 3 SHARE SCREEN showing summary of each option RECORD breakout session/Ask to unmute/show video <ul style="list-style-type: none"> Thoughts/initial reactions to the portfolio elements and strengths/weaknesses Any concerns/worries/questions about it Areas where further information is needed 	WR Facilitators	Summary of the portfolio for moderator to share screen														
6.56 – 6.58 (2 mins)	Polling question Q. How supportive would you be of Council considering Portfolio 3? Would you: <table style="margin-left: 40px;"> <tr> <td>Totally support it</td> <td>1</td> </tr> <tr> <td>Slightly support</td> <td>2</td> </tr> <tr> <td>Neutral</td> <td>3</td> </tr> <tr> <td>Slightly oppose</td> <td>4</td> </tr> <tr> <td>Totally oppose it</td> <td>5</td> </tr> </table> SHARE RESULTS	Totally support it	1	Slightly support	2	Neutral	3	Slightly oppose	4	Totally oppose it	5	Lead Facilitator					
Totally support it	1																
Slightly support	2																
Neutral	3																
Slightly oppose	4																
Totally oppose it	5																
6.58 - 7.04 (6 mins)	Presentation of Portfolios 4 & 5: <ul style="list-style-type: none"> Reveal and explain Portfolios 4 & 5 	CCC – Natalee Evans	PPT slides														
7.04 – 7.14 (10 mins)	Breakout discussions: Discussion on Portfolios 4 and 5 SHARE SCREEN showing summary of each option RECORD breakout session/Ask them to unmute and show video <ul style="list-style-type: none"> Thoughts/initial reactions to the portfolio elements Any concerns/worries/questions about it Areas where they need further information 	WR Facilitators	Summary of the portfolio for moderator to share screen														
7.14 – 7.17 (3 mins)	Polling question Q. How supportive would you be of Council considering Portfolio 4? Would you: <table style="margin-left: 40px;"> <tr> <td>Totally support it</td> <td>1</td> </tr> <tr> <td>Slightly support</td> <td>2</td> </tr> <tr> <td>Neutral</td> <td>3</td> </tr> <tr> <td>Slightly oppose</td> <td>4</td> </tr> <tr> <td>Totally oppose it</td> <td>5</td> </tr> </table> Q. How supportive would you be of Council considering Portfolio 5? Would you: <table style="margin-left: 40px;"> <tr> <td>Totally support</td> <td>1</td> </tr> <tr> <td>Slightly support</td> <td>2</td> </tr> </table>	Totally support it	1	Slightly support	2	Neutral	3	Slightly oppose	4	Totally oppose it	5	Totally support	1	Slightly support	2	Lead Facilitator	
Totally support it	1																
Slightly support	2																
Neutral	3																
Slightly oppose	4																
Totally oppose it	5																
Totally support	1																
Slightly support	2																

	<p>Neutral 3 Slightly oppose 4 Totally oppose 5</p> <p>SHOW RESULTS</p>		
7.17 - 7.25 (8 mins)	<p>Presentation: Portfolio Wrap up and Emergency Drought Management Plan</p> <p>Explanation that everything above so far is for long term planning.</p> <p>Explanation of Emergency Drought Management planning – and the two Levels of Service Scenarios</p>	CCC – Charles Leung	PPT slides
7.28 – 7.35 (7 mins)	<p>Breakout session: Discussion of the two Levels of Service scenarios, in a prolonged drought/emergency situation</p> <ul style="list-style-type: none"> • Show summary chart and discuss what it means for individuals, in practice i.e. shorter showers, level 5 restrictions. • Preference for Scenario 1 or 2 – the main differences being side of the desal, and cost to build and cost to operating 	WR Facilitators	Share screen showing the two LOS options
7.35 – 7.38 (3 mins)	<p>Final polling question</p> <p>We now have two polling questions about the two scenarios that you have just discussed.</p> <p>Q. How supportive would you be of Council considering Scenario 1? Would you:</p> <p>Totally support it 1 Slightly support 2 Neutral 3 Slightly oppose 4 Totally oppose it 5</p> <p>Q. How supportive would you be of Council considering Scenario 2? Would you:</p> <p>Totally support it 1 Slightly support 2 Neutral 3 Slightly oppose 4 Totally oppose it 5</p> <p>SHOW RESULTS</p>	WR Lead facilitator	Polling questions
7.38 - 7.40 (2 mins)	<p>Presentation: Staying involved</p> <ul style="list-style-type: none"> • Encourage people to stay involved & Ways to stay involved. • Summing up and close. 	CCC – Luke Drury	PPT slides
7.40 - 7.41 (1 min)	<p>CLOSE</p> <ul style="list-style-type: none"> • Thank everybody for attending • Explain the procedure for receiving incentive 	WR Lead Facilitator	

7.2 Appendix B – Recruitment screener

Central Coast Council – Forum Recruitment Screener for CATI

Summary of forum details:

Date of forum	Type of customer
Thurs 3 rd Dec 6-7.40pm	‘Vulnerable’ customers (n=15) – recruit 20
Thurs 10 th Dec 6-7.40pm	Residents (n=50) – recruit 60
Tues 8 th Dec 6-7.40pm	SMEs (n=15) – recruit 20
Mid Dec (various times)	10 in-depth interviews

SCRIPT:

Good... I’m calling from Woolcott Research on behalf of Central Coast Council.

We have been engaged by Central Coast Council to ask local residents and businesses to participate in an online discussion (via Zoom) to have their say and have their views heard about the future water supply for the region – it will feed into Council’s Integrated Water Resources Plan.

Participation in this project will involve 3 steps:

Attending an online forum discussion from 6.00 - 7:40pm on Thursday 3rd or 10th December (Businesses Tuesday 8th Dec). This will be conducted over Zoom and will require you to download the Zoom app on your phone, tablet or computer. (Explain later: You will also need a microphone and preferably a camera activated on your chosen device. Instructions will be provided.)

Receiving an email, watching a video and providing brief feedback. This will take approximately 15 minutes and must be completed before the second forum (see next).

Attending a second online forum discussion in February 2021 (date TBA). (Note that a third one may occur in April 2021)

In line with the research industry’s common practice, you would be paid as a token of appreciation for your time. You will receive \$100 (\$50 after each Forum) and from businesses \$200 (\$100 after each forum). This incentive ensures we attract a diverse range of people representing the cross section of our community.

Q1. Would you be interested in taking part in the engagement project? Is a very informal discussion and people usually find them quite informative and enjoyable. You will discuss things like the importance of water in your life, how you feel about water restrictions, how you feel about different water supply ideas to ensure we have enough water in the future.

Yes	1		
No	2	THANK AND CLOSE - IF POSSIBLE RECORD REASON FOR REFUSAL:	
		Not interested in subject	1
		Not enough money/incentive	2

IF UNABLE TO PARTICIPATE VIA ZOOM – ASK IF THEY WOULD LIKE TO CONDUCT AN INTERVIEW OVER THE PHONE WITH A RESEARCHER FROM WOOLCOTTS – AT A PRE ARRANGED TIME. CONTINUE WITH RECRUITMENT SCREENER AND COLLECT CONTACT DETAILS.

No 4

Q8. Does your landlord charge you all or part of your water/sewerage bill as a specific charge separate from the rent?

Yes 1
No 2

Q9. Do you speak a language other than English at home or with family?

Yes 1
No, English only 2

Q10. Are you of Aboriginal or Torres Strait Islander origin?

No 1
Yes, Aboriginal 2
Yes, Torres Strait Islander 3
Prefer not to say 4

Q11. Are you the owner or a decision maker for a small or medium business (less than 200 employees)?

Yes 1 RECRUIT FOR SMALL BUSINESS FORUM
No 2 GO TO Q12
Don't know 3 GO TO Q12

Q12. What industry does the business operate within? _____

Q13. What is your approximate annual household income?

Less than \$41,600 1
Between \$41,600 and \$78,000 2
Between \$78,000 and \$104,000 3
Between \$104,000 and \$156,000 4
More than \$156,000 5
Prefer not to say 6

Q14. Do you currently hold a concession card/low income healthcare card?

Yes 1 ELIGIBLE FOR 'VULNERABLE' FORUM
No 2
Prefer not to say 3

Q15. In the last 12 months, have you had any difficulty paying your water bills, e.g. had to ask for an extension or paid late, been on a special payment plan, been disconnected, delayed other payments or borrowed money to pay?

Yes 1 ELIGIBLE FOR 'VULNERABLE' FORUM
No 2
Don't know 3

Q16. Are you a member of any special interest groups or associations related to water, farming or the environment?

Yes (please specify)	1
No	2

Thank you for providing that information. Lastly, could you please provide your contact details so that we can send confirmation of the details of the forum and instructions.

FIRST NAME: _____
SURNAME: _____
Preferred ph. number to be contacted on: _____
STREET NAME: _____
EMAIL ADDRESS: _____

Thank you for agree to take part and providing all of this information.
We will be in contact with you to let you know the details of the forum.

7.3 Appendix C – Media releases

Central Coast Council Media Release

8 February 2021

Council looks to residents to help navigate our water future

Central Coast Council is planning the future water needs for our region and is looking to the community to be a part of the conversation.

Residents can have their say on two important water projects:

- the Integrated Water Resource Plan: an online survey is now open for community members, looking for their preferences on which are the best options to secure the Coast's water supply for future generations.
- the drought response desalination plant: the community is invited to provide feedback on the proposed modifications to the existing planning approval for the intake structure for a possible drought response desalination plant.

Council Administrator, Mr Dick Persson AM said that these two projects were critical to securing the Coast's water supply for future generations.

"I strongly encourage community members to get involved in planning the regions' water future," Mr Persson said.

"We can only achieve a resilient and sustainable water future by learning together as a community to value our precious resource."

ENDS

Central Coast Council Media Release

21 April 2021

Residents to help Council plan water supply for future generations

Central Coast Council is developing a plan that will secure the Coast's water supply for the future – the Central Coast Integrated Water Resource Plan – and is reaching out to the community for another round of consultation to help shape the plan.

Council's Director Water and Sewer, Jamie Loader said that due to the ongoing expansion and population growth of the Central Coast, our demand for water is also growing.

"Our current infrastructure on the Coast can only supply us with a limited amount of water, so we need to address ways to grow our supply, to meet our future demand levels," Mr Loader said.

"We are investigating and considering nine different supply and demand option types, from dams and desalination through to turning our wastewater into safe and clean drinking water.

"We have assessed these nine options across a range of key criteria, and through this process, we have developed five preliminary 'portfolios' – or groups of options – designed to meet our water needs into the future.

"Community feedback on these preliminary portfolios will be used to refine the portfolios for further analysis, so we encourage everyone to jump online and participate in our survey and tell us which portfolios you support."

Once finalised, these portfolios will become a key component of the Integrated Water Resource Plan.

Residents can fill out the survey by visiting yourvoiceourcoast.com/waterplan.

The survey closes on 2 May 2021.

ENDS

7.4 Appendix D – Coast Connect articles

7.4.1.1 9 February 2021: Coast Connect e-newsletter article



Planning the Coast's future water needs

Be a part of the conversation for our future water needs.

An online survey is now open, asking for your preferences on the proposed options to secure the Coast's water supply for future generations.

You can also provide feedback on the proposed modifications to the existing planning approval for a possible drought response desalination plant.

[Get involved now!](#)

7.4.1.2 3 March: Coast Connect e-newsletter link to survey

Contact us

Gosford Office

49 Mann Street
Gosford NSW 2250
Ph: 1300 463 954

Wyong Office

2 Hely Street
Wyong NSW 2259
Ph: 1300 463 954

Email us

ask@centralcoast.nsw.gov.au

Important links

[Planning our water future](#)

[Have your say - Mannering Park shared pathway](#)

[Have your say - Floodplain management](#)

[Porters Creek Wetland Biodiversity Conservation Agreement on exhibition](#)

[Rates Harmonisation – Overview and FAQs](#)

7.4.1.3 10 March: Coast Connect e-newsletter article



Planning our water future

Did you know you can Have Your Say on planning the Coast's water future. Fill in our online survey.

[What's proposed?](#)

7.4.1.4 Coast Connect paid editorial

- 21 April 2021: Central Coast Chronicle
- 22 April 2021: Pelican Post
- 23 April 2021: Coast Community News



Coast Connect

Central Coast Council's weekly news and community information

From Council

My Final Report went to the Minister last week, as well as presented at an Extraordinary Council Meeting.

I have recommended the Councillors not be allowed to return, and the September election be delayed allowing a public inquiry into the merger, particularly into what needs to be done to successfully complete it.



It is pleasing that all seven local members of Parliament agree with this recommendation, although I suspect for quite different reasons.

It is disappointing all seven continue to oppose any rate rise, even though they have all been briefed and I believe they understand there are no viable alternatives.

At the time of writing I am unaware of what the Minister will do. I suspect there will be a public inquiry and my appeal to the broader community, as well as our elected Parliamentary leaders, is to resist using it as a political opportunity to score points, and to take a positive approach to helping restore community confidence in their council.

The hard decisions have been taken to restore the Budget to a small surplus. New systems are in place to provide transparency as to the state of the budget monthly. A new and experienced CEO has taken control. All the ingredients are in place to allow the Council to move ahead.

I believe the community is tired of political 'grandstanding' and wants its local political leaders to do just that. LEAD. If you agree this would be a good time to let them know.

Dick Persson AM
Administrator, Central Coast Council

Planning the Coast's water supply for future generations

Have your say on the Coast's future water supply

As the Central Coast grows, so does the demand for water. However, our current infrastructure can only supply us with a limited amount of water so we need to address ways to grow our supply to meet future demand levels.

The Central Coast Integrated Water Resource Plan will help us do that, but we can't develop a long-term water plan for the Central Coast without finding out what you want.

To date we have conducted an online survey and held a series of virtual forums with our community and businesses to help us understand which long term options they support most.

We investigated:

- Water conservation programs
- The enlargement of dams
- Desalination
- Stormwater harvesting
- Increase use of groundwater
- Recycled water for non-drinking purposes
- Environmental flow substitution and/or purified recycled water for drinking
- Water sharing with Hunter Water Corporation

We know it isn't just as simple as selecting only one of the above – no single option will suffice in isolation. So from the feedback we have collected, we have shaped five possible water supply portfolios that could be used to meet our water needs into the future.

Now we are asking you to give us your feedback on these options before we finalise the draft plan to go on public exhibition later this year.

There have been significant changes in environmental factors, water infrastructure, the operating environment and knowledge in the 13 years since we last planned for our region's long-term water security. Together we'll develop a plan that will secure the Coast's water supply for future generations.

Visit yourvoiceourcoast.com/waterplan to view videos and factsheets on the five portfolios, and complete the survey to let us know which of these options you support (or don't support!).

The survey will close on 2 May, 2021.

Reminder - flags down next week

The last day of patrol at 15 beach locations will be **Sunday 25 April**



Council meeting

To find out when the next Council meeting is and to view it online go to centralcoast.nsw.gov.au/meetings

Development Applications and Consents

Development Applications and Consents can be inspected at centralcoast.nsw.gov.au by searching 'Development Applications' or in person at Council offices in Gosford and Wyong 8.30am-5pm weekdays.

Under the Government Information (Public Access) Act 2019, submissions on Development Applications are required to be published on our website. Submissions lodged using Council's DA Submission Form or online portal will have personal contact details and signature redacted. All other submissions will be published in full. Your submission may also be reproduced in full in Council reports or in Court proceedings.

Be the **first** to know!

Sign up today at centralcoast.nsw.gov.au/enews



Council Offices 2 Hely St Wyong / 49 Mann St Gosford | 8.30am - 5pm, Monday to Friday | P 1300 463 954

NEXT ISSUE Don't miss the next issue. Sign up for our e-news at centralcoast.nsw.gov.au/enews

7.4.1.5 21 April 2021: Coast Connect e-newsletter article



Planning the Coast's water supply for future generations

As the Central Coast grows, so does the demand for water. However, our current infrastructure can only supply us with a limited amount of water so we need to address ways to grow our supply to meet future demand levels.

The Central Coast Integrated Water Resource Plan will help us do that, but we can't develop a long-term water plan for the region without finding out what you want.

From community feedback received in the first phase of consultation, we have shaped five possible water supply portfolios that could be used to meet our water needs into the future.

[Tell us what you think](#)

7.5 Appendix E – Print advertising

The following half page advertisement was placed in:

- Central Coast Chronicle: 10 February 2021
- Pelican Post: 11 February 2021
- Coast Community News: 12 February 2021



Planning your water future

Central Coast it's time to talk about your future water needs!

Central Coast Council is currently developing a plan to secure our water supply for future generations – the Integrated Water Resource Plan.

We want to better understand how you feel about the different water supply and demand option types we are considering.

You can get involved in the water plan by completing our online survey.
yourvoiceourcoast.com/waterplan



The following half page advertisement was placed in:

- Central Coast Chronicle: 14 April 2021
- Coast Community News: 16 April 2021
- Pelican Post: 22 April 2021



Planning your water future

Central Coast it's time to talk about your future water needs!

Central Coast Council is currently developing a plan to secure our water supply for future generations – the Integrated Water Resource Plan.

As part of this plan, we have developed five preliminary 'portfolios' (or groups of options) designed to meet our water needs into the future.

These portfolios include a range of water supply and demand options – from dams and desalination through to turning our wastewater into safe and clean drinking water.

Tell us which of these portfolios you support by completing our online survey.

yourvoiceourcoast.com/waterplan



7.6 Appendix F – Digital advertising

7.6.1.1 February 2021: Advertising to broader Central Coast community on Facebook

Central Coast Council Sponsored ·

The implementation of a desalination plant is just one of the NINE options that we are considering including in our Integrated Water Resource Plan – addressing our future water needs on the Coast.

We want to hear from you!

Watch the video and tell us if desalination – or any of our other options – is something you want Council to consider by completing our online survey.

YOURVOICEOURCOAST.COM
Planning our water future | Your Voice Our Coast [LEARN MORE](#)

1

Like Comment Share

Central Coast Council Sponsored ·

Council are looking at NINE different options to address our future water needs on the Coast – as part of our Integrated Water Resource Plan.

One of these options is looking at dams... we could potentially expand the volume of storage on one of our current dams, or even build an additional dam.

We want to hear from you – is this an option you would like Council to consider?

Tell us by filling out our online options survey

YOURVOICEOURCOAST.COM
Planning our water future | Your Voice Our Coast [LEARN MORE](#)

16

42 comments

Like Comment Share



Central Coast Council ✓

Sponsored · 🌐



Water sharing between regions is just one of NINE options that Council are considering in the Integrated Water Resource Plan – addressing our future water needs on the Coast.

How do you feel about water sharing between regions? Is it something you want Council to consider as part of their long-term plan?

Tell us by completing our online survey 🗳️

WATER SHARING

YOURVOICEOURCOAST.COM
**Planning our water future |
Your Voice Our Coast**

[LEARN MORE](#)

👍 1



Like



Comment



Share

7.6.1.2 February 2021: Advertising to Coast home and business owners on Facebook



The implementation of a desalination plant is just one of the NINE options that we are considering including in our Integrated Water Resource Plan – addressing our future water needs on the Coast.

We want to hear from you! 🗣️

Watch the video and tell us if desalination – or any of our other options – is something you want Council to consider by completing our online survey.



YOURVOICEOURCOAST.COM
Planning our water future | Your Voice Our Coast [LEARN MORE](#)



Council are looking at NINE different options to address our future water needs on the Coast – as part of our Integrated Water Resource Plan.

One of these options is looking at dams... we could potentially expand the volume of storage on one of our current dams, or even build an additional dam.

We want to hear from you – is this an option you would like Council to consider?

Tell us by filling out our online options survey 🗣️



YOURVOICEOURCOAST.COM
Planning our water future | Your Voice Our Coast [LEARN MORE](#)





Central Coast Council ✓

Sponsored · 🌐



Water sharing between regions is just one of NINE options that Council are considering in the Integrated Water Resource Plan – addressing our future water needs on the Coast.

How do you feel about water sharing between regions? Is it something you want Council to consider as part of their long-term plan?

Tell us by completing our online survey 📄



YOURVOICEOURCOAST.COM
Planning our water future |
Your Voice Our Coast

LEARN MORE

👍 1



Like



Comment



Share

7.6.1.3 19 April – 2 May 2021: Google advertisements



7.7 Appendix G – EDMs

7.7.1.1 9 February 2021: EDM to those who signed up to receive project updates



Planning the Coast's future water needs

Hi Alexis,

You told us you wanted to be a part of the conversation for our future water needs... and now you can have your say on two important water projects!

The Integrated Water Resource Plan

There are many things we need to consider to ensure there will be enough water for the Central Coast into the future.

Central Coast Council is currently investigating and considering nine different water option types, including dams, desalination, environmental flow substitution, purified recycled water and more!

An online survey is now open to tell us what you think about our shortlist of options for our long-term water supply.

The drought response desalination plant

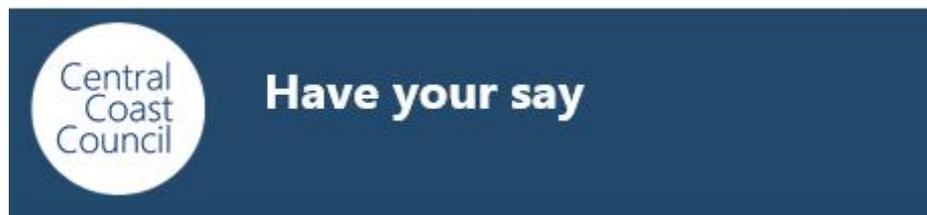
Council is seeking to modify the existing planning approval for the possible construction of a drought response desalination plant adjacent to Toukley Sewage Treatment Plant. This is our insurance policy in case of unprecedented drought conditions.

This will involve amending the existing DA which includes an intake structure on Budgewoi Beach to a direct ocean intake structure off the coast between Jenny Dixon Beach, Noraville and Pelican Point Beach, Magenta.

You're invited to provide feedback.

Your Voice Our Coast

7.7.1.2 18 March 2021: EDM to those who signed up to receive project updates



Planning the Coast's water future

Hey Alexis,

We just wanted to remind you that you can still have your say on two important water projects that Council are currently working on.

Survey 1: Water, sewer and stormwater prices

Every few years Council reviews how much it costs to produce drinking water, treat sewage and manage stormwater. Part of this involves us checking in with you to make sure your views are considered. The time to have your say has come again. Tell us what's important to you about how we provide water, sewer and stormwater services.

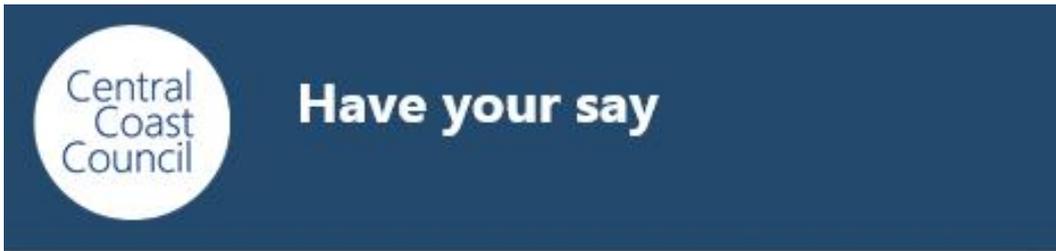
[Take our short survey](#)

Survey 2: Our future water supply

We are currently investigating and considering nine different options to secure the future of water on the Coast – including dams, desalination, environmental flow substitution, recycled water and more! Tell us what you think about our shortlist of options for our long-term water supply.

[Take our short survey](#)

7.7.1.3 20 April 2021: EDM to those who signed up to receive project updates



Planning the Coast's water future

Hey Alexis,

We need you to help us shape our Integrated Water Resource Plan – to secure the Coast's water supply for the future!

As the Central Coast grows, so does the demand for water. However, our current infrastructure can only supply us with a limited amount of water, so we need to address ways to grow our supply, to meet our future demand levels.

We have developed five 'portfolios' – or groups of options – designed to meet our future water needs.

Which of these portfolios do you support?

[Take our survey!](#)

7.8 Appendix H – Stakeholder emails and letters

7.8.1.1 1 March 2021: Email to stakeholders

Future water needs of the Central Coast



Alexis McLaren on behalf of Integrated Water Resource PI
To ○

↩ Reply ↩ Reply All → Forward ⋮

Mon 1/03/2021 12:55 PM

Hey there,

It's time to talk about future water needs of the Central Coast

Central Coast Council are developing the Integrated Water Resource Plan (IWRP), which looks at the future water needs of the Coast – and your email was passed on to us as someone who might be interested in this project.

There are many things we need to consider to ensure there will be enough water for the Central Coast into the future. We're currently investigating and considering nine different water option types including dams, desalination, environmental flow substitution, purified recycled water and more.

HAVE YOUR SAY

[An online survey is now open](#) to tell us what you think about our shortlist of options for our long-term water supply. We also recommend checking out the factsheets and the explanatory video before completing the survey. These can also be viewed by clicking the link above. This survey closes on **21 March 2021**.

If you want to continue to be a part of planning our water future here on the Coast, we also encourage you to [sign up for our newsletter](#), which will keep you updated on the process of the IWRP.

If you have any questions about this project, please don't hesitate to ask.

Kind regards,

The IWRP Team
Central Coast Council

7.8.1.2 2 March 2021: Letter to stakeholders



2 March 2021



Dear General Manager

It's time to talk about future water needs of the Central Coast

Central Coast Council are developing the Integrated Water Resource Plan (IWRP), which looks at the future water needs of the Coast.

There are many things we need to consider to ensure there will be enough water for the Central Coast into the future. We're currently investigating and considering nine different water option types including dams, desalination, environmental flow substitution, purified recycled water and more.

An online survey is now open to tell us what you think about our shortlist of options for our long-term water supply.

Visit yourvoiceourcoast.com/waterplan to complete the survey and check our range of factsheets and other educational material available. This survey closes on **21 March 2021**.

If you have any questions about this project, please contact me on iwrp.enquiries@centralcoast.nsw.gov.au

Kind regards,

A handwritten signature in blue ink, appearing to read "Charles Leung".

Charles Leung
Project Manager, Integrated Water Resource Plan
Water and Sewer
Central Coast Council
E: iwrp.enquiries@centralcoast.nsw.gov.au



7.8.1.3 22 April 2021: Email to stakeholders

Have your say about the future water needs of the Central Coast



Integrated Water Resource Plan
To



Thu 22/04/2021 6:17 PM

Hey there,

It's time to talk about the future water needs of the Central Coast

We need you to help us shape our Integrated Water Resource Plan – to secure the Coast's water supply for the future – and your email was passed on to us as someone who might be interested in this project.

As the Central Coast grows, so does the demand for water. However, our current infrastructure can only supply us with a limited amount of water, so we need to address ways to grow our supply, to meet our future demand levels.

We have developed five 'portfolios' – or groups of options, as no single option will suffice in isolation – designed to meet our future water needs.

Which of these portfolios do you support? We want to hear from you!

[Visit the project page](#) to read about the portfolios, the water supply options and the frequently asked questions, and then [take our survey!](#)

If you want to continue to be a part of planning our water future here on the Coast, we also encourage you to [sign up for our newsletter](#), which will keep you updated on the process of the IWRP.

Kind regards

The Integrated Water Resource Team

E: IWRP.enquiries@centralcoast.nsw.gov.au

7.9 Appendix I – Radio script

Central Coast, it's time to talk about your future water needs!

Central Coast Council is currently developing a plan to secure our water supply for future generations – the Integrated Water Resource Plan.

We want to better understand how you feel about the different water supply and demand option types we are considering.

You can get involved in the water plan by completing our survey online. Go to [your voice our coast dot com forward slash water plan](http://yourvoiceourcoast.com/forward/slash/waterplan).

7.10 Appendix J – Social media

7.10.1.1 17 February 2021: Facebook post



Central Coast Council ✓

Published by HubSpot · 17 February · 🌐

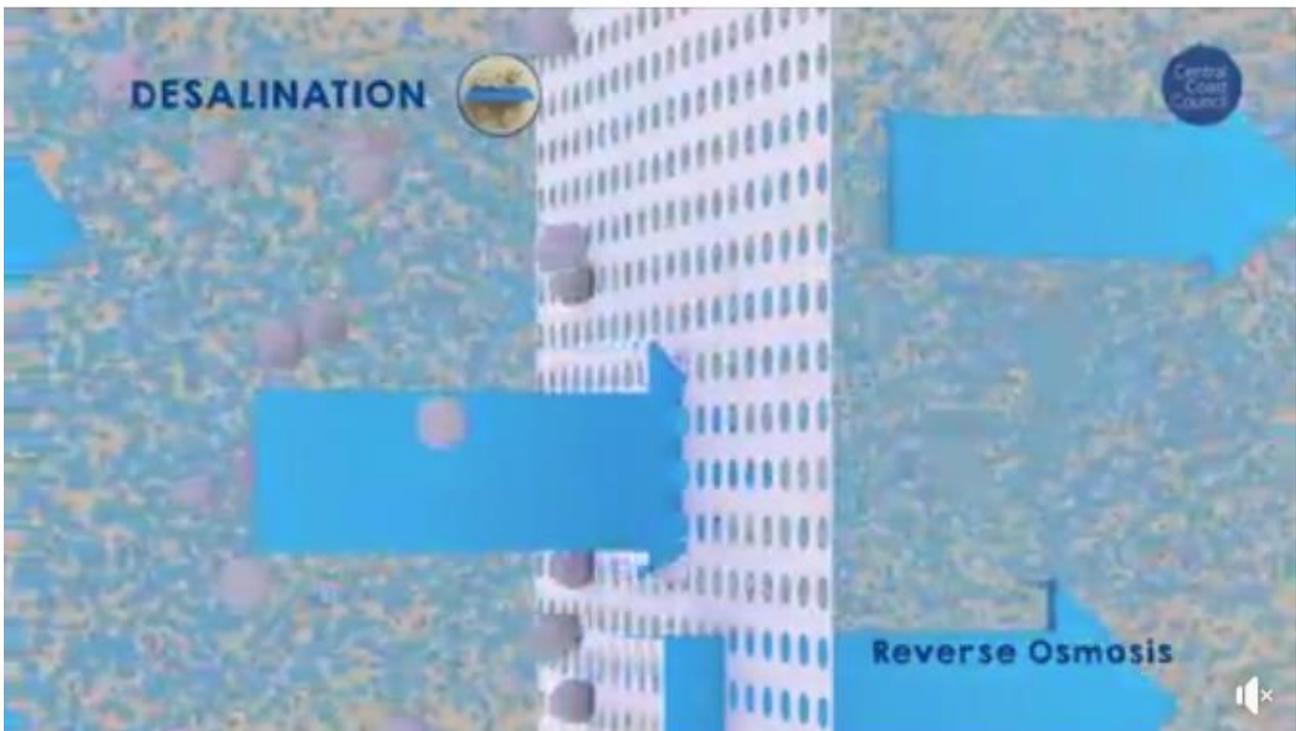


Desalination... it's an interesting topic that seems to make some big waves in the community. Some people think it is a great option for the future while others believe it to be troubled waters. The implementation of a desalination plant is just one of the NINE options that we are considering including in our Integrated Water Resource Plan – addressing our future water needs on the Coast.

🗣️ We want to hear from you!

Check out this video and tell us if desalination – or any of our other options – is something you want Council to consider by completing our online survey:

<https://hubs.la/H0GFMcN0>



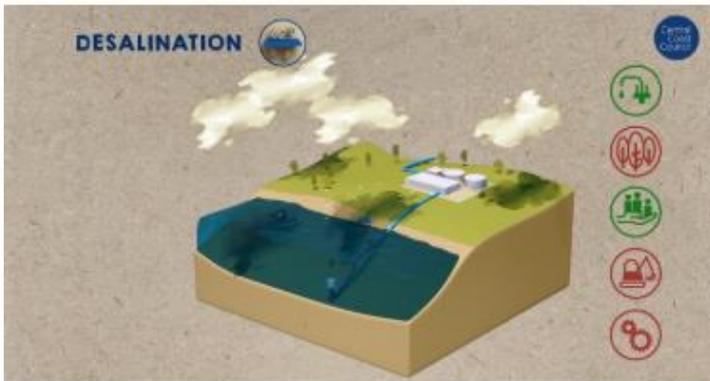
8,846
People reached

733
Engagements

Boost post

7.10.1.2 17 February 2021: Instagram post

 centralcoastcouncil



centralcoastcouncil The implementation of a desalination plant is just one of the NINE options that we are considering including in our Integrated Water Resource Plan – addressing our future water needs on the Coast.

 We want to hear from you! Tell us if desalination – or any of our other options – is something you want Council to consider.

Check out the full video and complete the survey via link in bio 📲

7.10.1.3 17 February 2021: Twitter post



CentralCoastCouncil @CCoastCouncil · Feb 17



The implementation of a desalination plant is just one of the NINE options that we are considering including in our Integrated Water Resource Plan.

Tell us if desalination is something you want Council to consider by completing our online survey: hubs.la/H0GFMP60

